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and
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Air Rallies

BECAUSE we believe that a great deal of good can come from international air rallies (quite apart from the pleasure of taking part in them) *Flight* has this year taken an active interest in several of the more important events of this kind. In co-operation with the Royal Aero Club, the corresponding organizations and flying clubs of other countries have on several occasions generously arranged for large numbers of British pilots and their passengers to visit the Continent without cost for accommodation or entertainment, and there has been no doubt about the warmth of the welcome received.

Encouragement of such personal contacts and friendships between nations wherever and whenever possible is one of the surest guarantees of peace. It did not pass without remark on the recent Spanish rally, mentioned elsewhere in this issue (at which eight nations were represented), that the strained relations between that country and certain others had no bearing whatever upon the cordiality that was apparent between the individual airmen. It also came as a surprise to many visitors to find out how little they knew of Spain as a country. A full account of the Spanish Rally will be given next week.

That air travel has made the world smaller, or that the air has brought nations closer together, are hackneyed catch-phrases; but, in fact, measured in travelling time, the circumference of the earth has been reduced from many months by surface transport to a few days by air. This is not an appropriate place to discourse on the mind-broadening aspect of travel, and transcontinental contacts are still chiefly effected by large aircraft; but the small ones of private-owner type have a particular facility, especially in Europe, for bringing peoples together. What is even more important is that there undoubtedly exists a kindred spirit between people who fly themselves. Their mutual interest and enthusiasm provide an introduction and a firm basis for friendship. From personal experience, we well remember that without a word of each other's language, but aided by various line-shooting poses and hand-wavings, a long and pleasant discussion of the merits and otherwise of various aircraft was recently carried on with some pilots of the Spanish Air Force. As a result, a friendship sprang up which made subsequent meetings all the more pleasant.

Visits and holidays abroad by air are to be encouraged, and it is to be hoped that we in turn will continue to be visited in this country. It is probable that, if more people realized how simple, convenient and relatively cheap it is to fly abroad by light aircraft, and how much pleasure and interest is to be derived from it, the volume of such traffic across the Channel would greatly increase and there would be welcome repercussions on club memberships and light aircraft activity. We look forward to the time, a year or two hence, when British clubs can offer worthy return hospitality to friends on the Continent.

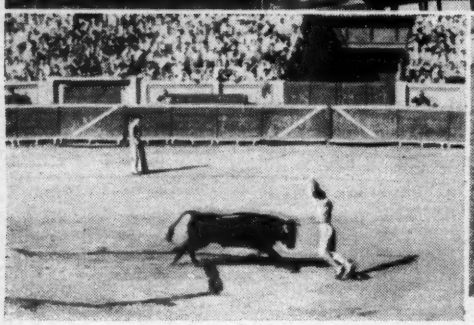
Reliability of Light Aircraft

With air rallies still in mind, and in particular the aircraft and pilots taking part in them, it is a remarkable tribute to both reliability and airmanship that nearly one hundred machines, of which all but three were in the light class, set off to fly for more than 1,200 miles over Spain in the recent rally, and all but one arrived at the end of the course. Admittedly there were some crews who, through fatigue or indisposition, short-circuited the route, but these, fortunately, were few. There were no reportable accidents or casualties. Though the majority of the aircraft were single-engined and in the 100-150 h.p. class, one pre-war ultra-light took its two passengers the whole way on two cylinders and a maximum of 38 h.p.

Weather was for the most part fine, the skies were clear, and the majority of airfields were reasonably good; but such results, achieved over a country comprising high mountains, rugged, sparsely populated valleys, and with the use of air maps of less than customary accuracy, are most encouraging and must serve as a keen incentive to many would-be pilots.

Rallying Round Spain

Seven-day Air Tour



(Above) Clearing Customs at Perpignan in the south of France before flying round Cap Creus to Barcelona. The Ju52s were not in the rally! (Left) A picturesque airfield cafe at Valencia, where on arrival the ladies received bouquets of flowers. The Gemini was Madrid-bound.

"Flight" photographs.

(Right) Some of the 93 aircraft which toured Spain. French Norécrins are in the foreground and Italian Macchis may be seen behind them. Both types won prizes. Also recognizable are British Messengers and Proctors, and a Danish KZ-III. (Left) Rally participants who wished to have them were given free tickets to a bull-fight at Pamplona.

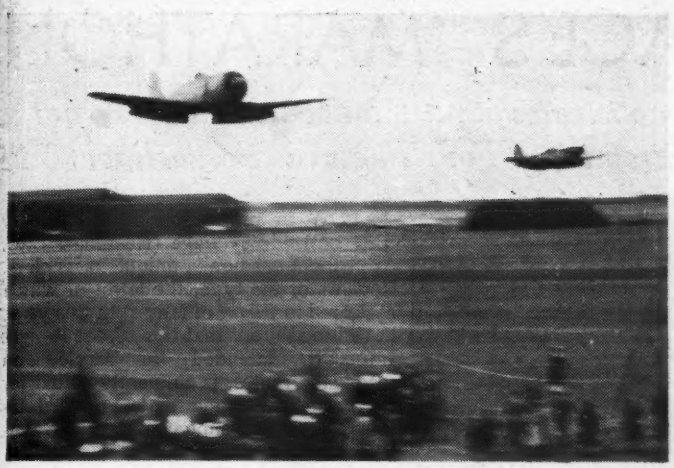
THE word "hectic" has been used by more than one participant to describe the International Air Rally of the Royal Aero Club of Spain, and for a single word it probably gives as true a snap impression as possible. There was hard work in preparation, hard flying to cover the great distances in a short time, and, very occasionally, hard words—caused, as is usually the case, by some trivial thing heated up no doubt by the brilliant sun ever-present in a cloudless sky. Add to these the interest, excitement and mild anxiety of the flights, the warm welcome from the gay Spanish people at each new port of call, the bull fighting, and the dinners and entertainment commencing at midnight and lasting until the early hours of the morning; add all these together, and one does in fact see the justification for the word "hectic."

Of the ninety-three light aircraft which took part in the rally over fifty were from Britain, and members of the R.Ae.C. and of the Wolverhampton, Derby and Yorkshire clubs were particularly well represented. In addition, several British light aircraft were flown by entrants from the seven other countries represented.

The aircraft started to assemble at Barcelona at midday on Monday, July 4th, and after one night in the city the whole party took-off for Valencia and then, day by day through the week, proceeded to Madrid, Jerez (and Cadiz), back to Madrid and finally to Pamplona. The distance to be covered between Tuesday morning and Saturday afternoon was approximately 1,200 miles.

Undoubtedly the leading spirit in the whole rally was the host, His Excellency the Duke of Almadovar del Rio, who is president of the Spanish Royal Aero Club. He was able to travel to most of the airfields with the participants and succeeded in making personal contact with the majority of his many guests. There were several competitions during the Rally for which prizes were given. *Flight's* Gemini was fortunate to receive a cup and trophy for regularity during the week's flying, and a British competitor also won the wine-tasting contest at Jerez de la Frontera.

In the next issue of *Flight* will appear an illustrated description of the rally, with some personal impressions of the places visited and the various entertainments and competitions.



NORTHERN NAVY DAY

Air-racing, Display and Static Exhibitions in Cumberland

The success of Anthorn's air display owed much to good performances by piston-engined Naval fighters. Seen during a low-speed fly-past earlier in the programme, this Sea Fury and Seafire took, respectively, first and second places in the handicap race.

IF any complaint can justly be directed against the all-embracing S.B.A.C. Displays it is that, by their magnitude, they sometimes inflict aeronautical indigestion. Any guest who "went aboard" H.M.S. *Nuthatch* (Royal Naval Air Station Anthorn, near Carlisle) last Saturday with the intention of absorbing every item of Naval information available ran the risk of succumbing to a similar ailment. The organizers of Anthorn's Navy Day provided not only a flying display, but a comprehensive static exhibition, and for those unmoved by Naval Aviation, there were activities ranging from sheep-dog trials to country dancing.

Recalling the chill breeze that swept the airfield's surface during the afternoon, we felt that "nestling" is not the word to describe the location of Anthorn. It is true, however, that the surrounding hills help to subdue those "met." phenomena which normally cut down flying hours, for while the low cloud base did hamper the display, a full programme was possible, though weather elsewhere was generally worse.

Four Sea Hornet 20s of 801 Squadron, Lee-on-Solent, recently disembarked from H.M.S. *Implacable*, started the flying; the formation was led by Lt. Cdr. D. B. Law, who commanded the Navy's aerobatic squadron on its tour of America last year. They were closely followed by three Seafires from Bramcote—visitors from No. 1833 (R.N.V.R.) Air Squadron. As the Sea Hornets landed after giving but a hint of their aerobatic prowess, it was evident that more was to come.

With the air to themselves, the three Seafires orbited menacingly, while a large armoured amphibian, disguised as a tank, crawled on to the centre of the airfield. As the first fighter dived, the stutter of Hispano cannons broke out, admittedly from a different direction, but nevertheless effectively. Red flashes erupted from the grass surrounding the vehicle, smoke bursts appeared above it, while amid the haze, a white-capped figure made a tactful exit before the other Seafires struck. A high degree of realism throughout the attack rewarded some careful planning by those pressed into service as sound-effects men.

Flying, respectively, a Sea Fury 11 and a Seafire 47, Lt. Brown and Lt. Hanson proved decisively that, well handled, piston-engined fighters can still impress. They made their runs alternately, from opposing corners of the airfield, with dark wing-tip vortices recording the path of their loops and rolls against the sky. In utter contrast, they concluded with a slow, flaps-down formation fly-past against the wind.

The cream Olympia sailplane of Lt. Cdr. Sproule, the Navy's gliding "king," which appeared at the Culham display a week earlier, was demonstrated in truly regal style. After this near-soundless event came a quick return to noise—the hissing crackle of rocket-assisted take-offs by a Seafire and a Firefly.

Departing from opposite ends of the runway, two 801 Squadron Sea Hornets took off simultaneously for a splendid exhibition of "Siamese twin" aerobatics, with a third aircraft making even more agile individual passes between each of their runs. Lt. Kilburn, from Culham, then displayed a Sea Vampire 20, announcing his speed over relayed R/T after each beat-up of the airfield.

A competition between Anthorn's test and ferry flights gave the display an original conclusion. It took the form of a high-speed three-lap handicap race round a triangular circuit of 27 miles, with take-off intervals planned to give a close finish. Local trials of the actual aircraft entered had determined their speed under race conditions—at 1,000ft with engines running at maximum rated boost and revs. On the results obtained, the order of take-off was: Firefly 5 (232 kt); Firebrand 5 (238 kt); Seafire 47 (275 kt); Seafire 15 (278 kt); Sea Fury 11 (295 kt).

Piloted by Lt. Brown, the Sea Fury made up all the leeway necessary to pip the Seafire 47 (Lt. Hanson) at the post during the final dive past Anthorn control tower. Hot on their rudders were the Firefly (Lt. Grant) and the Firebrand (Lt. Whitaker), while Lt. Shoebridge, the half-retracted port undercarriage leg of his Seafire 15 subtracting some 18 knots, was forced to retire.

To complete the entertainment, an aged Seafire and an engineless Oxford were ignited and foam-smothered by the Anthorn fire-fighters, who, incidentally, are top in their trade among stations of Northern Naval Air Command.

BLERIOT FLIGHT CELEBRATIONS

IN connection with the fortieth anniversary of Louis Bleriot's Channel crossing (an historic flight which is the subject of a special article in this issue), celebrations are to be held in England and France this week-end (July 30th-August 1st).

Twenty-five pioneer French aviators, selected by the Aero Club de France, will arrive on Saturday to attend a luncheon given by the *Daily Express*, and will afterwards watch the Gatwick Display. A number of the leading figures in British aviation will also be present at the lunch.

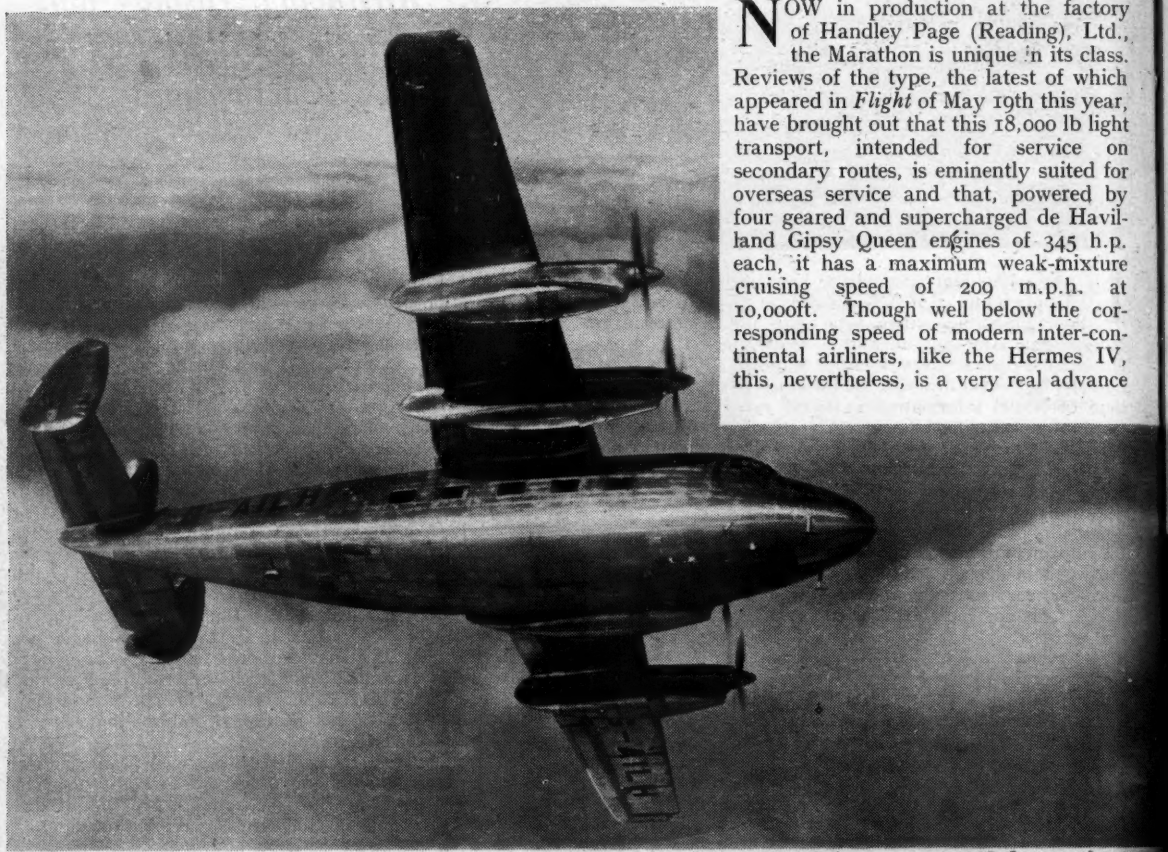
After the Display, the whole party of some 50 people will be taken by coaches to Redhill, whence they will fly in a number of private and club aircraft *via* Lympne to Le Touquet for a dinner given by the Le Touquet Aero Club. On Sunday they will be flown over the Bleriot monument at Les Baragues; then, after lunch and a farewell dinner given by the Le Touquet Club, they will stay the night in France before flying home on Monday morning. The R.Ae.C. is assisting in the organization of the party.

DOROTHY SPICER MEMORIAL FUND

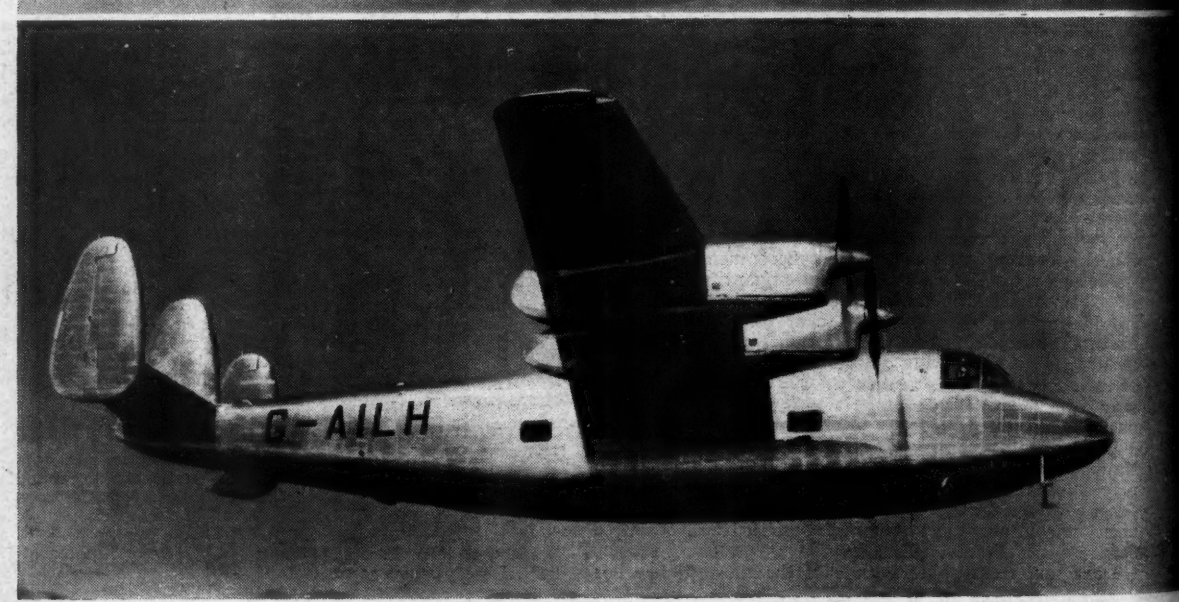
THE latest list of donors to the Dorothy Spicer Memorial Fund organized by the Society of Licensed Ground Engineers is as follows: Mrs. E. H. Sawbridge, W. J. Andrews, Anglo-American Oil Co., Ltd., William Courtenay (film show), A. C. Jack, Miss R. Parker, Sir Alliott Verdon-Roe, S. L. A. E. Northolt Branch, Percival Aircraft, Ltd., Dowty Equipment, Ltd., Dunlop Rubber Co., Ltd.

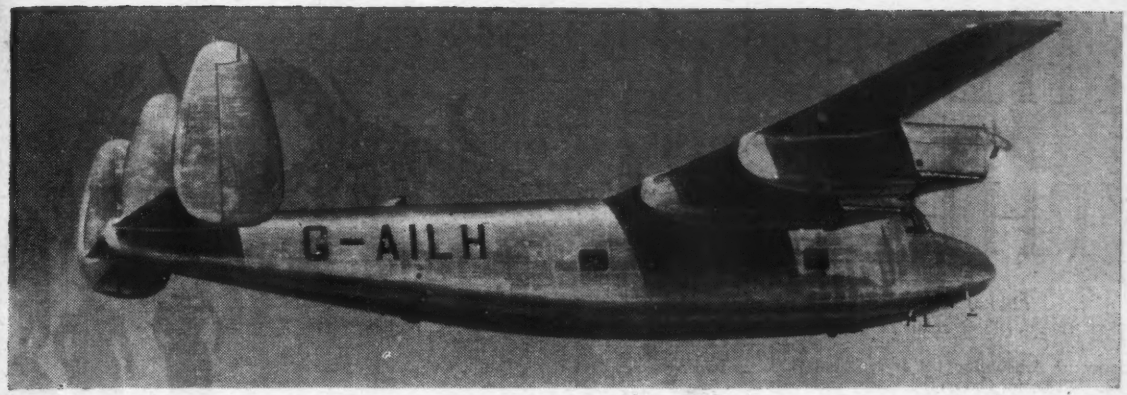
HANDLEY PAGE'S MARATHON

The Second Prototype Demonstrates that Manoeuvrability is not Lacking in Britain's Promising Four-Engined Feederliner



NOW in production at the factory of Handley Page (Reading), Ltd., the Marathon is unique in its class. Reviews of the type, the latest of which appeared in *Flight* of May 19th this year, have brought out that this 18,000 lb light transport, intended for service on secondary routes, is eminently suited for overseas service and that, powered by four geared and supercharged de Havilland Gipsy Queen engines of 345 h.p. each, it has a maximum weak-mixture cruising speed of 209 m.p.h. at 10,000ft. Though well below the corresponding speed of modern inter-continental airliners, like the Hermes IV, this, nevertheless, is a very real advance

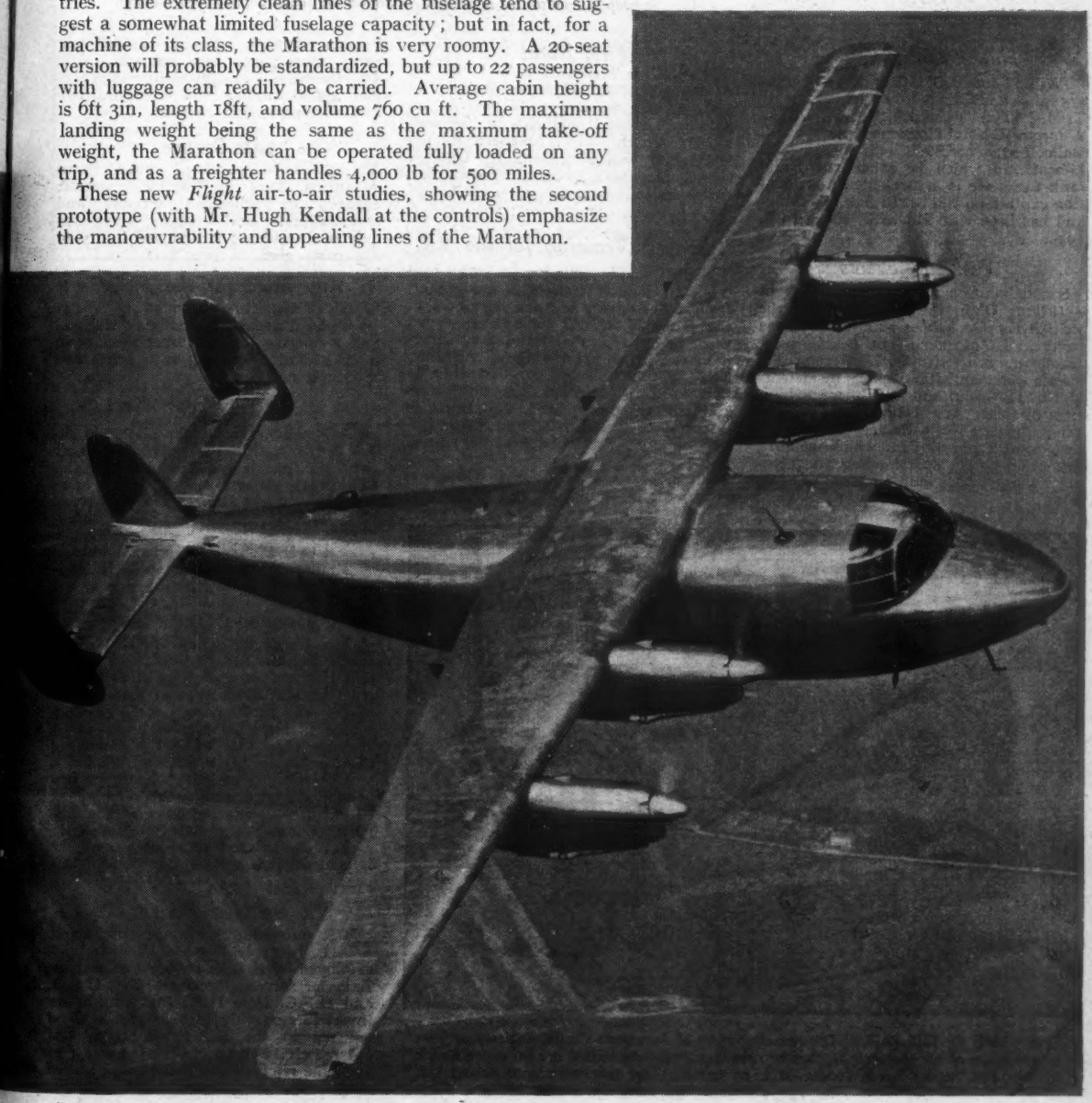




on Dakota performance. Not, however, in respect of speed alone is the Marathon attracting attention from several countries. The extremely clean lines of the fuselage tend to suggest a somewhat limited fuselage capacity; but in fact, for a machine of its class, the Marathon is very roomy. A 20-seat version will probably be standardized, but up to 22 passengers with luggage can readily be carried. Average cabin height is 6ft 3in, length 18ft, and volume 760 cu ft. The maximum landing weight being the same as the maximum take-off weight, the Marathon can be operated fully loaded on any trip, and as a freighter handles 4,000 lb for 500 miles.

These new *Flight* air-to-air studies, showing the second prototype (with Mr. Hugh Kendall at the controls) emphasize the manœuvrability and appealing lines of the Marathon.

"Flight" photographs.



HERE AND THERE

STRIKING DOWN: R.N.V.R. ratings of No. 1832 Squadron assist their regular brethren as Seafires are struck down the forward lift of H.M.S. "Implacable." Aboard this carrier, flagship of Admiral Sir Rhoderick McGrigor, the Squadron, has been training.

Fokker Meteors

OF the 300 Meteors to be constructed under licence by the Fokker Company at Amsterdam, it is reported that 150 will be for the Netherlands Army Air Force, and the other half for the Belgian Air Force. Derwent 5 turbojets for the fighters will be supplied by the Belgian F.N. factory at Herstal, where production has already begun.

New "Millionaire"

LATEST of B.O.A.C. pilots to complete a million miles of flying is Capt. T. M. ("Tim") Bulloch, D.S.O., D.F.C. A former Coastal Command pilot, Capt. Bulloch was credited with sighting 28 U-boats, of which he attacked 19 and sank five. He is at present a Constellation captain on the North Atlantic route, and has been with B.O.A.C. since April, 1946.

Week-end Events

IN collaboration with the Isle of Wight Flying Club, the Air League of the British Empire held a successful garden party and "at home" at Lea Airport, Sandown, last Saturday. Among the events were aerobatic displays by Meteors of No. 11 Group and a sailplane exhibition by Mrs. Ann Douglas. At Cambridge Airport No. 5 Reserve Centre held its second flying display, which included formation flying, spot landing and aerobatic competitions, and an aerial treasure hunt.

First Hand

FLYING a Harvard, A.V-M. F. W. Mellersh, A.O.C. the R.A.F. in Malaya, last Sunday took part in an attack on rebel strongholds in the foothills of Mount Ophir, Northern Johore. With him was Maj.-Gen. D. Dunlop, G.O.C. Singapore District, who watched troops move in to attack after the bombing.

Plainfare Training for the V.R.

RESERVISTS will receive some encouragement from the news that, from mid-August, selected members of the R.A.F.V.R. will be able to spend their 15 days' annual training as supernumary aircrew on the Berlin Air Lift. They will be selected for this duty in batches of 18 (10 pilots, four navigators and four signallers), and, on arrival in Germany, will be briefed and allotted to one or more flights at bases in the British Zone.

Preference will be given to those experienced in transport flying, or ex-bomber aircrews. No one aircraft will carry more than one reservist. The attachment will be equivalent to the normal annual training period, and full pay and allowances will be paid.

Safe Service

IN 5,400,000 passenger miles flown during May by R.A.F. aircraft engaged on scheduled services and special flights, and trooping, there was only one accident; it involved injury to one passenger.

Any More for the Moth?

THE Veljekset Karhumäki O.Y. has opened a seaplane station at Helsinki and is offering joy-rides over the city in a Cirrus-Moth, sporting twin floats and a cockpit enclosure.

Loophole

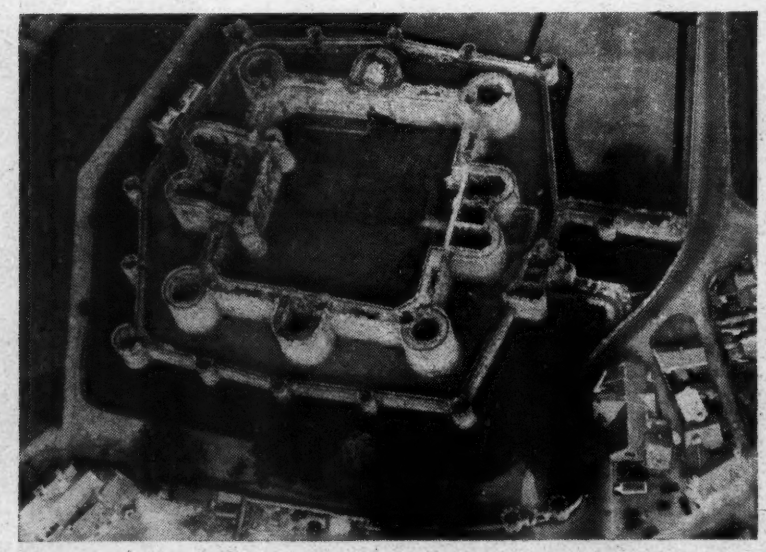
AN American helicopter pilot was recently charged with flying at 100ft over the business centre of Glendale, California. After a two-day trial, however, he was acquitted. His defence was that, whereas the law prohibited orthodox aircraft from descending below 1,000ft over a congested area, there was no similar statute applying to helicopters.

Beaulieu's Open Day

AT a Battle of Britain air display to be held at R.A.F. Station Beaulieu, near Brockenhurst, on September 17th, it is hoped that every type of British helicopter will take part. Among other events planned for the occasion are a demonstration by Flight Refuelling, Ltd., a Martin-Baker seat ejection and a mock airborne assault. Some 18,000 people attended last year's display at Beaulieu, which is the home of the Airborne Forces' Experimental Establishment. As related on p. 86, over 80 R.A.F. stations will be "at home" this year.

Delayed Honour

FOR outstanding war services, Capt. H. J. F. le Good, a British pilot employed by K.L.M. on the Amsterdam-Batavia service, received the D.S.O. and D.F.C. from H.M. the King at an investiture on July 12th. Capt. le Good enlisted in the R.A.F. in 1932, but entered civil aviation before the war. In 1939, he rejoined the R.A.F. and served



THE SHAPE OF THE PAST: This revealing study of Beaumaris Castle, Anglesey, is from an exhibition of air photographs, showing castles and religious houses, opened at the Kodak Gallery, 184, Regent Street, London, W.1, on July 16th and continuing until August 6th.

HERE AND THERE

with Nos. 635 and 35 Squadrons. He was a Pathfinder for many raids on Europe and later took part in food-dropping operations over Holland in April, 1945.

Highest Superfort

DURING an investigation of atmospheric electricity, a lightened B-29 of the U.S. Military Air Transport Weather Service reached a height of 48,562ft—probably the greatest ever attained by a Superfortress. The present altitude record for aeroplanes is 59,492ft, established last year in a Ghost-powered D.H. Vampire.

FORTY YEARS BACK

"Of the other demonstrations which were given, the most notable was that of Mr. Martin in a glider towed behind a motor car. His experiments afforded one more example of the foolhardiness of tests of this character . . . he ended up his short and erratic aerial journey by being pitched off his machine over a picket fence, which the machine itself demolished."—*From "Flight" of July 17th, 1909.*

Inglorious End

BRITAIN'S first aircraft carrier, the former H.M.S. *Pegasus*, which has been lying rusting in Antwerp harbour for two years under the Panamanian flag, has been bought by a Dutch firm for about £9,000 and will be broken up for scrap.

The British Government bought the vessel, then a tramp steamer, in 1913, renamed her *Ark Royal*, and fitted a flight deck and seaplane hoists. She became *Pegasus* in 1935, when the famous 22,000-ton carrier sunk in the last war was laid down—the first ship to be specifically designed as a carrier.

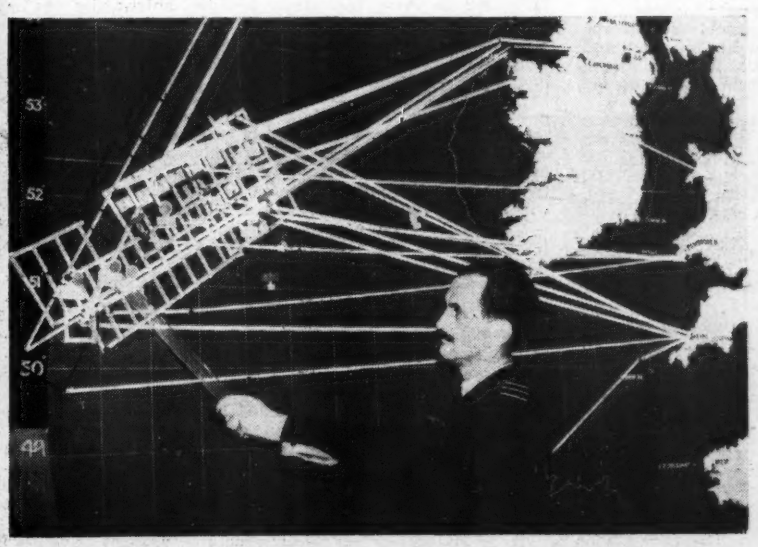
NO FRONT DOOR: Air for the axial compressor of the Allison J-35 turbojet installed in this experimental Republic F-84 Thunderjet is delivered through two flush-side entries instead of the normal single nose-duct. As related last week, this machine was modified to permit the installation of radar equipment in the nose. An increased rate of climb is reported.

Helicopter Records

SIKORSKY AIRCRAFT now claim the world's helicopter altitude record, with an ascent to 21,220ft by their smallest design, the S-52. The same aircraft has already set up, subject to confirmation, the 3-km speed record of 129.6 m.p.h. (formerly held by the Fairey Gyrodyne) and also the 100-km closed-circuit record of 122.75 m.p.h.

Early-morning Exercise

IN the early hours of the morning of June 22nd, in 53 degrees of frost, seven Soviet parachutists of the Chkalov Central Aero Club stepped out of an aircraft (it would be interesting to know the type) flying at 33,360 ft. After periods of 16-18 minutes they touched down, as a Soviet report puts it, "in perfect health."



AREAS OF PROBABILITY: In this photograph, indicative of the very thorough measures taken as a result of such (fortunately rare) occurrences, a 19 Group H.Q. officer indicates the centre of intensive search by Coastal and Bomber Commands for the Met. Halifax reported missing on July 9th. Two methods, "creeping line-ahead" and "square search" are commonly employed to sweep areas (seen overlapping on the map) in which the aircraft is believed to be.

News in Brief

IT is with regret that we have to record the death at, the age of 70, of Mr. L. T. Delaney, chairman of Delaney Gallay, Ltd., makers of aircraft and automobile cooling equipment.

* * *

Sir Frederick Handley Page will open the 24th Model Engineer Exhibition at the New Horticultural Hall, Westminster, on August 17th.

* * *

Mr. H. P. Folland entertained a number of friends in the aircraft industry on the occasion of the ninth annual sports meeting of Folland Aircraft, Ltd. The event was opened by the Mayor of Southampton.

* * *

Photographs of some intricate castings in Hiduminium and Magnuminium for piston-engines and gas turbines are included in a new brochure illustrating representative products of High Duty Alloys, Ltd., Slough.

* * *

Mr. B. W. Silverwood (recently elected secretary of the North London Branch of the Institute of Welding) has been appointed technical commercial welding engineer to the industrial department of Philips Electrical, Ltd.

* * *

The Anglo-American Oil Co., Ltd., announces that the name of the oil-resistant nitrile synthetic rubber marketed by them under the name Perbunan has been changed to Paracril. Composition and characteristics of the material are unchanged.

* * *

Private owners visiting France should be able to find out all they want to know about good food by a study of the 855 pages of *Auberges de France*, published by the Club de Sans-Club, Paris. Purchasers of the guide (obtainable in this country, at 12s, from Seymour Press, Ltd., 22, Great St. James Street, London, W.C.1) automatically become members of the club for 1949.

* * *

Following the recent formation of a Canadian Rotax Company, a similar organization has been established in Australia under the title of Rotax Australia Proprietary, Ltd., with headquarters at 81, Bouverie Street, Melbourne, N.3. Mr. A. R. Harrison is chairman. Full service and overhaul facilities for Rotax components and Lucas gas-turbine equipment will be available. Test apparatus will also be at the disposal of users.

WASHINGTON D.C.: Recognised as the most up-to-date airport in the United States, Washington is used mainly by domestic operators. Permanent refuelling points are installed on the tarmac.

Hermes and Marathon Turbo-prop Versions: Airport Movements: Aeradio Contract

CIVIL AVIATION NEWS

TUDOR BAN RELAXED

SUBJECT to A.R.B. approval of certain modifications to Tudors Mk. II and V, the Ministry of Civil Aviation is to lift the ban on passenger-carrying by these aircraft. The restriction was imposed on all types of Tudor, following the loss of the B.S.A.A. Tudor IV *Star Ariel* last January. Neither of the types affected by this announcement was previously employed on regular passenger-carrying, but both have lately been used (with outstanding success) on the Air Lift, by B.S.A.A. and Airflight, Ltd. The Tudor IV, however, is still prohibited from taking passengers.

SKYWAYS REDUNDANCY

AS a direct result of the decision to withdraw a proportion of the civil aircraft from the Berlin Air Lift, Skyways, one of the main operators, has found it necessary to dismiss 400 employees, including ground staff from Dunsfold and aircrew. The company was flying eight Yorks and Lancastrians, and only one now remains on the operation. Rumours which gained currency that the company was to be wound up are stated to be without foundation.

In taking its economy measures, the company was influenced also by the prospect of repercussions on the charter market caused by the withdrawal of some civil aircraft from the Air Lift since there will be greater competition than hitherto. It is generally accepted, also, that the condition of the charter market is not as good as before the Air Lift started over twelve months ago.

Skyways will continue to maintain their entire fleet—more than half of which has been affected by this latest development—though the decision to do so is one which may later have to be reconsidered.

The unpredictable condition of charter flying will create a problem for many other charter companies, large and small, who will be similarly affected.

U.S. NAVIGATION PLAN

THE use of omnirange, G.C.A. and I.L.S. in contribution to all-weather flying in the U.S.A. is no new subject in these pages, but it is now announced that the Civil Aeronautics Administration plans to complete the installation of a nation-wide navigation system within five years.

It will entail the construction of 400 omnirange centres, nearly 300 of which have now come into operation. A new device for use with omnirange, and which considerably enhances the value of the system, is D.M.E.. (Distance-Measuring Equipment). This development requires two transmitters, one on the ground and one carried in the aircraft. Signals transmitted from the aircraft are received at the ground station and immediately rebroadcast, the time between transmission from and reception at the aircraft being the measure of distance between aircraft and ground station. The time interval is measured by electronic computing equipment in the aircraft and translated into miles and tenths, so providing the pilot with what is, in effect, a mileage meter. So far, there are only two D.M.E. transmitters operating in the U.S., but development is proceeding.

Another subsidiary device for use with omnirange is an electronic system whereby an aircraft can be maintained at any required distance, e.g., two miles, parallel to the main route. The importance of this is that it virtually makes every flying route a multiple-lane aerial highway—a matter of some importance on the more congested lanes.

FARNBOROUGH FORECASTS

THERE is every indication of some noteworthy engine developments in the new-production civil airliners which will be seen at Farnborough. Handley Pages expect to demonstrate the Hermes V, the largest aircraft powered by turboprops. An experimental version of the piston-engined Hermes IV, which is in production for B.O.A.C., the Hermes V is at present undergoing tests with ground-running airscrews, but standard flight airscrews will soon be fitted so that full-scale engine tests may begin in August and enable adequate test-flying to be completed in time for the Display. It is possible that this aircraft (powered by four Bristol Theseus turboprops) will be fully furnished for carrying passengers.

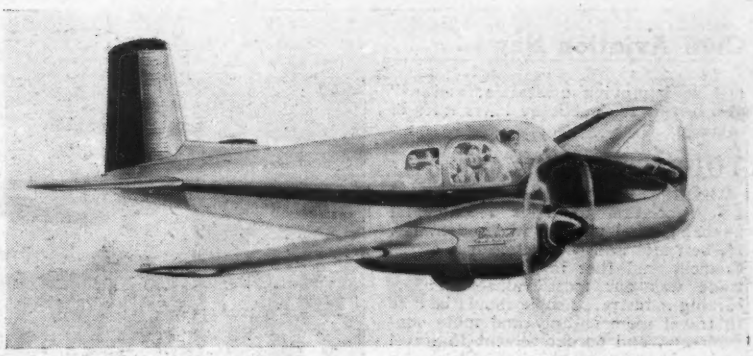
The weight-to-power ratio of the very promising Theseus is 0.865 lb/h.p. compared with the 1.12 lb/h.p. of the Hercules piston engine, and the all-up weight of the Hermes V has been increased by 2,000 lb to 84,000 lb. Although the Mk. IV is expected to have a higher top speed (357 m.p.h.) than the Mk. V (351 m.p.h.), the cruising speed of the latter is expected to be 349 m.p.h.—nearly 50 m.p.h. faster than that of the Hermes IV. This is explained by the fact that gas-turbine power units operate most efficiently at speeds just below maximum; greatest power and optimum fuel consumption for any given height are reached at maximum speed, but a slight drop in r.p.m. prolongs the life of the power unit.

At 10,000ft at maximum speed the Hermes V is expected to cover 0.50 air miles per gallon of fuel and at 30,000ft consumption improves to 0.81 a.m.p.g. At economical speed the a.m.p.g. ratio at 10,000ft has been estimated at 0.602 and at 30,000ft at 0.80.

It is understood that few structural changes would be necessary to convert Hermes IVs to take Theseus engines should experiments suggest that such a conversion would be beneficial. Two Hermes Vs have been ordered by the Ministry of Supply as part of its turboprop development programme.

Another new type which is expected to be on view at Farnborough is the Mamba-engined Marathon, designed to

accommodate 22 passengers. The engine installation in the first aircraft is complete and running tests will proceed in order that the machine may fly by the end of August to qualify for Farnborough. The standard Marathon has four D.H. Gipsy Queen 71 piston engines; the Mamba version is purely experimental. Very few details of the estimated performance of the Mamba version have been published, but with approximately 2,020 shaft h.p. against 1,380 h.p. of the standard models a climb of 2,000ft per min and a cruising speed of 260 m.p.h. have been suggested.



NEW BONANZA: Beech Aircraft Corporation have announced a new twin-engined project designated the Model 50. This new Twin Bonanza—as it is called—can accommodate five persons, or six over short ranges. Full details are not yet available, but the artist's impression leaves no doubt that it is of conventional design with a mild Beechcraft flavour.

AIR CHARTER

FRUIT traffic has been disappointing this year, and although there have been some recent enquiries for flying cargoes from Valencia and North Spain the rates quoted by owners are said to be higher than the shippers are willing to consider.

The freight market generally has been quiet during recent weeks and an indication of the current trend in prices was an inquiry to carry 44 passengers from Helsinki to New York return, for which the charterers were not prepared to pay more than £100 per head for the round trip.

French Liberators are now in the market for charter in French West Africa, Madagascar and to the Far East; they are equipped to carry either 35 passengers or 6,000 kg of freight. A number of charterers have again flown pigeons in large quantities from the north and south of England to Belgium and Luxemburg.

Another interesting cargo was 3,450 kg of live eels from Montpellier to London, and a contract has been put out for tender for carrying fish packed in ice from Sweden to Athens, returning to Scandinavia with fruit. For this charter large-capacity aircraft are required—which should interest owners of the Haltons returning from the Berlin Air Lift. Altogether, 17 large aircraft were withdrawn from the Air Lift on July 12th; all of them had been operating as tankers. The outlook for these Haltons, and for the tanker Liberators, is not thought to be particularly hopeful, since they will require conversion into normal freight-carriers and a new C. of A. will be necessary before they are ready for commercial operations.

Charters for ships crews continue to be made, while a considerable number of inquiries are being received for day's outings, particularly to Jersey and the Continent. It is understood that aircraft are already being booked for this purpose for the summer of 1950.

MARCH AIRPORT ACTIVITY

MORE than 96,000 passengers travelled on scheduled air services and international charter flights during March, embarking and disembarking at airports which report to the Ministry of Civil Aviation. In the table are figures for the 15 busiest airports in the United Kingdom. Northolt and London combined handled 58 per cent of the total number of passengers. Aircraft movements in column (a) are for scheduled services and international charter flights only; in column (b) are movements of all other aircraft. Figures given in columns (c) and (d) are for passengers and freight on scheduled services and international charter flights only.

Airport	Aircraft Movements (a)	Aircraft Movements (b)	Passengers In and Out (c)	Freight (lb) In and Out (d)
Aberdeen	272	1,850	765	13,053
Belfast (Nutts Corner) ...	337	23	5,257	57,478
Inverness	273	27	1,301	26,427
Kirkwall	581	39	1,307	18,049
Liverpool	508	375	4,560	67,068
London	1,608	465	24,877	1,353,031
Manchester	308	753	2,839	103,358
Northolt	2,279	494	30,813	827,526
Prestwick	501	525	7,379	62,631
Renfrew	688	167	5,837	51,486
Ronaldsway	213	39	2,058	11,255
Southampton (Eastleigh)	298	1,131	1,423	4,488
Southampton Water ...	73	471	1,449	35,549
St. Mary's (Scilly Isles) ...	204	58	784	2,315
Stornoway	58	20	632	12,046
Others	1,892	13,683	4,731	882,925

CANADIAN CHARTER RATES

THE Canadian Air Transport Board has made new regulations to govern the rates charged by independent companies. Previously, operators engaged in contract charter flying were required to charge according to a set tariff or, in certain circumstances to make application to the Board for special rates. The new regulations (agreed by the Air Industries and Transport Association of Canada, the members of which are mostly private air transport companies) permit reduced rates for large consignments and define conditions in which companies may operate from bases other than their own. It is understood that a contract of 50 hours' flying at an average of at least two hours daily has been established as a minimum to permit a reduction of six per cent, and the sliding scale permits a maximum reduction of 33⅓ per cent over a contract for 500 hr. or more.

The scheme, it is thought, will benefit operators by increasing traffic

JOHANNESBURG'S NUMBER TWO: Germiston Airport, about 30 minutes by road from the city, is now used by South African Airways as a maintenance base for twin-engined aircraft and for operations by charter companies. The airport is also the headquarters of the Rand Flying Club. The international airport for Johannesburg, Palmietfontein, will eventually be superseded by the Jan Smuts Airport.

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and so improving utilization, and will also benefit the public by lower rates of carriage.

TOURIST EARNINGS

ADDRESSING members of the Travel Association at their recent 21st annual general meeting in London, Mr. Herbert Morrison (Lord President of the Council) said that in 1948 the tourist trade was our most valuable dollar-earning industry. People should be able to travel more cheaply and more conveniently, and encouragement to travel within the Commonwealth and among the English-speaking countries generally was of the greatest importance. "On such travel," he said, "if we seize its opportunities, can be based our future greatly expanded fleet of airliners to give us in the air the status which our Merchant Navy has given us on the sea."

Mr. Morrison quoted the Travel Association's estimate that about 700,000 visitors from overseas were expected in 1951 for the Festival of Britain. That number, he pointed out, would earn roughly £70,000,000 including fares on British ships and aircraft, of which over one-third would be in dollars or hard currency.

BRITISH TOURIST : Citizens of Johannesburg saw a Percival Prince for the first time when one of these feeder airliners flew over the city during the proving flight from which (as reported in Flight, July 7th) it has recently returned. A tour was made of airfields in the Union.

AERADIO AT SARAWAK

THE Government of Sarawak has commissioned International Aeradio, Ltd., to provide radio equipment, facilities and operating staff. Kuching airfield, Sarawak, has been open for daylight operation and already Malayan Airways are flying a once-weekly service to Singapore. It is intended shortly to increase the frequency of that service and also provide a link with North Borneo.

The Sarawak facilities, when completed, will consist of an H.F./W.T. point-to-point channel to Singapore, an H.F./W.T. air-to-ground channel, an M.F. radio beacon, an aural V.H.F./D.F. and V.H.F./R.T. and H.F./R.T. control channels. Aeradio will be responsible for the technical day-to-day management of these facilities and for controlling the operating and maintenance staff at the airfield. The company's Sarawak representative will be required to act as adviser to the Government, to co-ordinate activities and to co-operate with the adjacent air authorities, the Director of Civil Aviation, Malaya (Air Vice-Marshal S. E. Storrar) and the U.K. Civil Aviation Telecommunications Representative, Singapore (Mr. G. Glossop).

AUSTRALIAN ANNUAL

FOR reference purposes the *Australian Aviation Annual*, edited by Stanley Brogden, may be recommended. A brief summary of each of the Australasian airlines, including the lesser-known, and of the Australian manufacturers, has been included. There are also articles on the Royal Australian Air Force, model flying, gliding and club activities. Mr. Hudson Fysh contributes an article on Qantas in 1947-48. The book is published by the Hawthorn Press (P.O. Box 34, Hawthorn, E.2, Melbourne), and replaces the *Australian Aviation Year Book*.

BREVITIES

FORTY-TWO captains flying with Australian National Airlines are "mileage millionaires"; quite a number are said to have flown more than 3,000,000 miles.

* * *

For the three months ended March 31st, Trans-Australia Airlines showed a higher passenger-load factor than did Australian National Airways. In actual numbers, the former carried 130,702 passengers and the latter 169,874.

* * *

Forming the only direct link between Belgrade and Western Europe, a weekly service between that capital and Zurich has been started by Swissair. Aircraft leave Zurich on Saturdays and return on Sundays.

* * *

Trans-Canada Air Lines have entered into a general sales agency agreement with Swissair whereby each company will act as the other's representative in its home country. The agreement provides for ticket- and reservation-handling.

* * *

Mr. Ivan Holyman, managing director of Australian National Airways, said recently that in the last ten years the company had paid £6,000,000 to the Treasury in direct and indirect taxation. The payroll was £2,000,000 and the number of employees 42,000.

* * *

K.L.M. are now operating Convairs on all scheduled flights between Amsterdam, Manchester and Dublin. Flying time between Manchester and Dublin is one hour and the flight from Manchester to Amsterdam has been cut by 20 min. to 1 hr. 40 min.

* * *

Capt. R. H. McIntosh, who (as related last week) was one of three veteran airline pilots entertained by Lord Pakenham, has flown a total of 21,032 hr. on 136 different types of aircraft. It is believed that of the pioneers who flew on commercial airlines in 1919, Capt. McIntosh—who is chief pilot of Airwork, Ltd.—is the only one still flying professionally. He has carried over 114,000 passengers.

* * *

B.E.A.'s travelling exhibition is visiting Scotland shortly and will be seen in Glasgow from August 21st-28th; Greenock, August 29th-31st; Falkirk, September 1st-3rd; Edinburgh, September 4th-13th; and Largs, October 10th-14th.

* * *

Pan American-Grace Airways offer three classes of travel to Buenos Aires. Passengers may either sleep in berths on the DC-6 overnight service or travel in the normal fashion by tourist class DC-4. Thirdly, the company use DC-3s for local traffic throughout the eight Latin American countries on the route.

* * *

Toxic effects following the discharge of certain types of fire extinguisher in aircraft interiors are the subject of M.C.A. Information Circular No. 93. Resort to oxygen equipment may not in all circumstances counteract the effects because, in the conventional installations, a certain proportion of cabin air is delivered with the oxygen.

* * *

To provide the Channel Islands with an adequate supply of English papers at week-ends, B.E.A. have increased from one to two their special newspaper services (now at 0530 and 0535 hr) from Northolt. Passengers may fly on these early morning schedules, the second of which is for the peak holiday period, at week-ends only. The Corporation, incidentally, has introduced an extra passenger flight on Fridays, Saturdays and Sundays between Northolt and Dinard, making two on each of those days and one on Mondays.

* * *

Provisional figures issued by the M.C.A. show that total internal services in 1948 were fewer in number than in 1947. Stage flights fell from 65,527 to 51,497 but the number of passengers increased from 244,088 to 332,814. Scheduled ser-

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vices operated by independent companies in association with B.E.A. flew 3,954 stage flights over 108,164 revenue aircraft miles. A total of 12,896 fare-paying passengers was carried and the overall revenue load factor was 34.

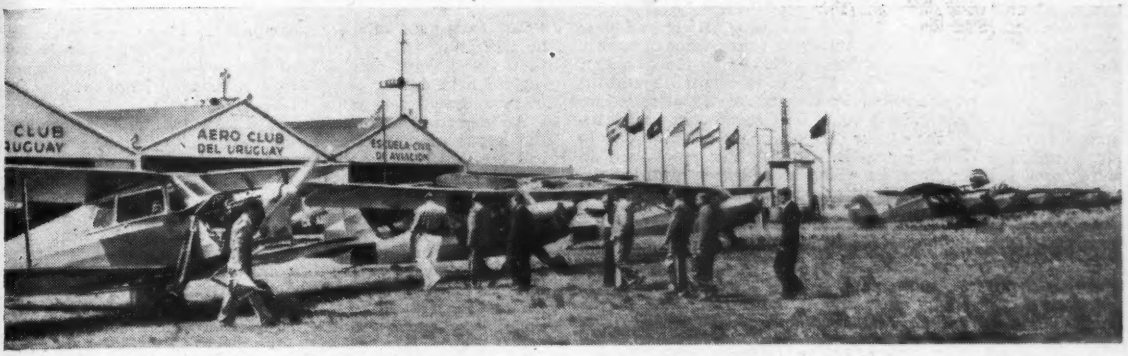
* * * *

Mr. W. Ronnie has been appointed Chief Constable of the Ministry of Civil Aviation Constabulary in succession to Sir John Bennett, who died last month. Before joining M.C.A. Mr. Ronnie was Chief Constable of Breconshire and had been a member of the Bucks Constabulary from 1927 to 1947. He became Deputy Chief Constable of the M.C.A. Constabulary in July, 1948.

* * *

Sir Patrick Dollan, chairman of the Scottish Air Advisory Council, has said that the Aberdeen-Edinburgh air service should be restored for certain next year, or possibly before. The authorities, he said, were well satisfied with the progress which had been made on the Edinburgh-London route. Reconstruction and extensions at Turnhouse were progressing, so that the airport would be available for use throughout the coming winter.

FROM THE CLUBS



CLUB FLEET : Among the aircraft in this photograph of Mellila airfield, used by the Uruguay Aero Club, can be seen a Hornet Moth. Other types flown by local club members and private owners are Piper and Fairchild Argus aircraft.

LUTON Flying Club is in process of being taken over by Britavia, Ltd., the parent company of Silver City Airways, Ltd. It will be remembered that the lease expired early in the year and offers were made to the Luton Corporation by various organizations for the flying rights and for running the social club.

Britavia, Ltd., has arranged with the Corporation to be responsible for club flying and for providing social amenities in the usual way. The club-house used before the war will be taken over and the company hopes that, after its redecoration and the making of certain improvements, it will be possible to open it by the end of the year. For the time being, largely because the season is well advanced, aircraft will be hired from Huntings, but plans are shortly to be discussed for providing the club with new aircraft next year.

The manager and temporary C.F.I. will be Mr. J. D. G. Bishop, D.F.C., who was chief pilot of Air Malta, Ltd. The airfield is conveniently situated near the town of Luton, and there are no limitations to flying except at night.

SOUTH AMERICAN INTEREST : A glider of the Uruguay Aero Club. The sport has a considerable following in South America, particularly in the Argentine. Mr. J. Ortner, president of the Albatross Gliding Club, Buenos Aires, is coming to England to take part (though he will not be eligible for an award) in the National Gliding Contests at Camphill on August 21st-28th.

* * *

WITH much regret the Southend Flying School has found it necessary to cancel the air display and race planned for August 6th. The organizers had approached Service and other sources for support in making the flying display truly representative, and ensuring a spectacle which would be up to the standard of previous functions. The race was to have been a handicap over three circuits of 20 miles. Unfortunately, the hoped-for co-operation was not forthcoming and the number of entries for the race was disappointing, so cancellation was considered the only alternative.

* * *

JUNE's long, light evenings enabled members of the London Aeroplane Club at Panshanger to record 203¼ hours of flying, an amount only slightly lower than the figure recorded in June last year, and one which brings the total for the first half of the year to just under 900 hr. At present more than 40 members are under instruction and 20 have obtained their Student Pilot's Licences under the new regulations; of these, two have since obtained Private Pilot's Licences.

There has been no further news of the Chipmunk which it is hoped shortly to obtain, but Mr. J. Cooper recently made his Moth Minor coupé available to members, bringing the fleet up to four Tiger Moths, two Hornets and a Moth Minor. One further Moth Minor is at present in course of repair, but will soon be back in service.

Five Club aircraft visited Broxbourne on July 10th and took part in the Dawn Patrol organized by Herts and Essex. Of five visiting aircraft which broke through the defences and won free breakfasts for their crews, four were from the London Aeroplane Club. Tiger Moth G-AHXC has been entered for the Siddeley Trophy Race and will be flown by Mr. Martin Sharp.

Teas are now served outside the clubhouse at week-ends, weather permitting, and, states the Club, any visiting pilots who care to drop in will be very welcome.

CRANFIELD CEREMONY

Presentation of Diplomas at the College of Aeronautics

WITH Marshal of the Royal Air Force Lord Tedder, G.C.B., heading a gathering of most distinguished guests, the second Annual Presentation of Diplomas to students of the College of Aeronautics, Cranfield, took place last Thursday.

In his opening address, the Principal of the College, Mr. E. F. Relf, C.B.E., stated that, of the students ending their courses, 41 had gained diplomas, ten of them with distinction. In addition to the diplomas, there were also two prizes, the Governors' Prize, awarded to the best all-round student for the two-year course, and the Principal's Prize, awarded for the best piece of original work done during the second year of the course. The Governors' Prize was to the value of twenty guineas, and took the form of books, selected by the recipient, in this case Mr. Alfred Neil Byron, ex-Flight Lieutenant engineering officer, who had specialized in aircraft design. The Principal's Prize, which could be either books or instruments, according to the desires of the winner, was awarded to Mr. Richard Stanton Jones, B.A., who had specialized in aerodynamics. The work for which he had been awarded the prize was the evolution of an empirical formula for quickly calculating the load distribution on swept-back wings.

Having presented the diplomas to the 41 successful students, Lord Tedder made one of his characteristically quiet and humour-salted speeches. The theme of his address was that scientists should also be humanists; he stressed the over-riding importance of keeping constantly in mind the value of the human factor, for without it all the wonders and all the achievements of science were dead.

Dr. H. Roxbee Cox, who is a member of the College Board of Governors, proposed a vote of thanks to Lord Tedder; and stated that the business of aeronautics was nowhere taught so completely as at Cranfield. Research could not be divorced from engineering and, at the College, they were closely wedded. The intention was that Cranfield should not merely produce the super-specialist form of technician, but would, rather, try to keep the human touch, so that its men would be seasoned with those no-less-important aesthetic values and so become the better scientists.

The Chairman of the Board of Governors, Air Chief Marshal Sir Edgar Ludlow-Hewitt, G.C.B., stated that, during the past 12 months, a new Chair had been established as the Department of Aircraft Economics and Production, under Professor J. V. Connolly, B.E., F.R.Ae.S. The Board were convinced that teaching in this subject was needed in this country, and that the establishment of the new Department would be amply justified. The year had been largely one of consolidation and development, and this was a process which was by no means finished, for the College had opened its doors literally within a few months from the start of collecting the necessary equipment for its establishment.

In his concluding address, the Principal amplified this matter in some measure. In the Department of Aircraft Design, he said, there had been a gradual and satisfactory augmentation of equipment. In addition, and for the aerodynamicists, there were now two high-speed tunnels running, whilst a 9in square tunnel, both for sub- and supersonic velocities, was at present in course of construction.

Whereas with the first-year entry of students, they had all taken the full course, this system had been found to place far too much of a strain on students, and it was now the practice to ask each man on entry what broad branch of specialization he wished to follow. The inauguration of short courses had been found very successful, and in addition to the four such courses held during the past year, an additional four would be inaugurated next year.

An important announcement was made by Mr. Relf regarding the letters of distinction to be used by ex-Cranfield men; it had been decided by the Senate that the award of a diploma should entitle a student to use the letters D.C.Ae. after his name.

It was originally estimated that reasonable entry for the two-year course, having regard to subsequent employment, was about 50. Forty-four students were now ending their second year, and 58 were ending their first year; there were indications that the 1949-51 entry would tend to be higher still. The percentage of applicants rejected was falling, suggesting that the College and its standards were becoming better known, and that men were not applying unless reasonably up to entry qualifications. Growth had been very rapid and it would have been surprising if considerable difficulties had not been met. That these had been overcome and the College brought to its present state in so short a time was a great tribute to the efforts of the staff, and to the whole-hearted support the staff had received from the Governors, the Ministry of Education, and the aircraft industry and the Services.

AWARDS

Diploma with Distinction.—E. M. Dowlen, R. S. Jones, B. W. B. Shaw, D. A. Treadgold (aerodynamics); A. N. Byron, W. R. Heald, K. L. C. Legg, C. B. Lewis (aircraft design); J. J. Bukovsky, G. E. Thirlwall (aircraft propulsion).

Diploma.—T. B. Booth, T. B. A. Boughton, E. G. Cane, L. J. W. Hall, P. A. Hearne, J. E. Rossiter, H. D. Ruben, J. M. L. Thomas, K. J. Turner (aerodynamics); A. Clegg, L. Ellerd-Styles, R. B. L. Foster, I. D. H. Gibbins, J. W. Hitchcock, S. Pallis, J. Speechley, W. Taylor, R. W. Trail, V. D. Trimm (aircraft design); S. Buck, W. R. Cushing, L. S. Davey, E. N. Grantham, P. C. Gupta, T. G. F. Hardy, D. E. Parish, P. Ramsden, D. J. N. Wakeling (aircraft propulsion). *Second year only:* K. E. Alming, G. E. Gadd, W. F. Wiles (aerodynamics).

GATWICK NEXT SATURDAY

NEXT Saturday's *Daily Express* Air Display at Gatwick promises to have a strong and well-varied international flavour. B-29s and F-80 Shooting Stars of the U.S.A.F. will fly past in formation; Ladislav Marmol is bringing over a new glider, the Lunak, from the Continent; Capt. Sondermann, Fokker chief pilot and personal pilot to Prince Bernhardt, will represent Dutch manufacturers in a demonstration of the S.11 trainer; the Patrouille d'Etampes of the French Air Force will give a display; and Miss Betty Skelton, from America, will demonstrate her particular brand of aerobatics. For the British manufacturers, S/L. R. Porteous will demonstrate the Auster with the Goodyear undercarriage and H. A. Marsh will fly the Skeeter helicopter.

The closing item will be an attack upon an imaginary enemy target at Gorse Hill at the west end of the airfield. The attack will start with ground-strafing by Meteors and a drop by the 16th Airborne Division (T.A.), while the R.A.F. "Paramedical" team will also take part by making individual drops and, also, landings in Horsa gliders.

For spectators impelled to become airborne themselves there will be joy-riding facilities provided by charter companies from 10.30 a.m. to 1.45 p.m. and from 6 p.m. until dusk. They will take the form of 40-45min South Coast trips (fare 30s) flown by Dakotas of Kearsley Airways, Ltd., and Hornton Airways, Ltd.

Special trains are being run from London, and visitors are warned not to alight at the Racecourse Station but to carry on to Gatwick Airport Station.

The airfield will be open to the public at 10 a.m., and the morning programme will consist of static exhibition and of demonstrations by R.A.F. police dogs, P.T. instructors, and gun teams of the R.A.F. Regiment. The main flying programme will begin at 2.30 p.m. Admission will be 2s 6d, payable at the turnstiles, and seats can be reserved in advance for 5s.

LADY DE HAVILLAND

WITH deep regret we record the death of Lady de Havilland, wife of Sir Geoffrey de Havilland. It will be recalled that two of her three sons—Geoffrey and John—both lost their lives in air accidents. Although Lady de Havilland accepted these tragedies as the price—terribly high though it was—of continuing the flying activities of this famous family, she did not, in fact, recover from the shock and had been ailing for some time.

In the early days of the de Havilland Aircraft Co., when the D.H. Moth was first produced, Lady de Havilland accompanied the Hon. Lady Bailey in a successful attempt to establish a world's height record for two-seater light aircraft. They reached 17,283ft. A year later, in 1928, she accompanied Sir Geoffrey in a further attempt on the same record. This was again successful, a height of 21,000ft being reached.

In the official announcement of her passing, it was requested that no flowers or letters should be sent.

The Bleriot monoplane, with its maker standing in the cockpit, is wheeled to the starting-point. A few minutes later he asked the question below

"Where *is* Dover?"

—asked Louis Bleriot at Calais 40 years ago : A Personal Recollection of an Epoch-making Flight

By HARRY HARPER

BLERIOT'S monoplane was the 11th of the series he had built. Leading dimensions were : span, 28ft. ; chord, 6ft. ; length, 25ft. ; all-up weight, 715 lb ; wing loading, 3.9 lb/sq.ft. Control was by wing-warping, an orthodox rudder, and "elevating tips" at the tailplane ends.

Its 24 h.p. "fan-type" three-cylinder air-cooled Anzani engine had automatic inlet valves and mechanical exhaust valves supplemented by auxiliary exhaust ports.

The crossing was made at a speed of about 45 m.p.h., in a wind of variable direction which blew initially at about 10kt, fell light in mid-Channel (where the pilot was out of sight of land) and gusted to 20kt at Dover.

The author of this article justifiably claims to be "the first air-news reporter".

IT was on a windy summer's morning, just 40 years ago, that I found myself perched somewhat precariously on the roof of a building not far from Calais. In my hand I held a portable telephone.

The line communicated with a room below in which was an operator of the Marconi Company with all his gear, while just outside, on the cliff, stood a tall pole carrying an aerial. This wireless station on the French coast—for the erection of which we had to gain the special permission of the French Government—and a similar one in the Lord Warden Hotel, Dover, were the first to be operated in connection with a pioneer aeroplane flight.

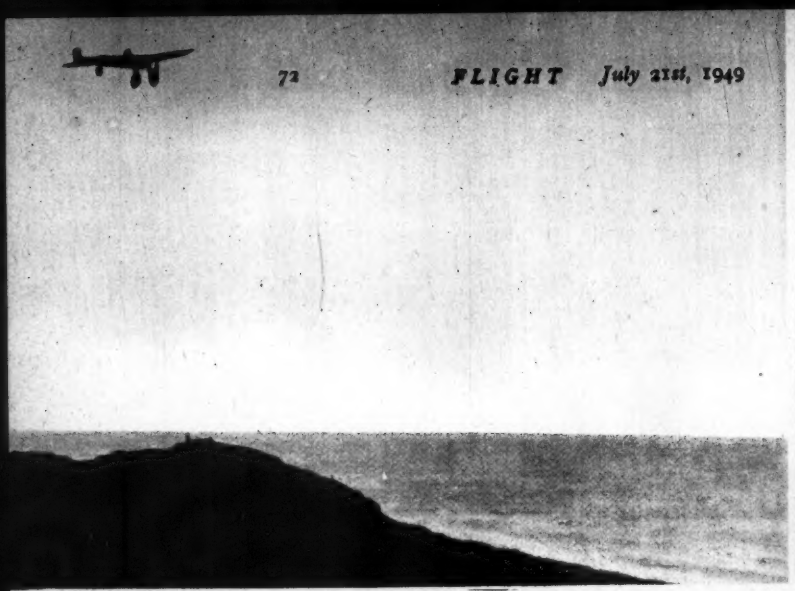
Below me on the sand-dunes, adjoining the little village of Les Baraques, was a tent from which a small monoplane was being towed, and into this machine, as I watched, climbed the Frenchman who, within the next hour, was to write his name on history by what, as one newspaper put it dramatically, was "the flight that changed the world."

That small aircraft on which I was looking down was none other than the famous little 24 h.p. monoplane in which its designer, constructor and pilot, the redoubtable Louis Bleriot, was just about to set off on the then perilous adventure of an attempt to cross the Channel by aeroplane between Calais and Dover.

From my vantage-point, on that never-to-be-forgotten morning of July 25th, 1909, I 'phoned down to the Marconi man below brief word-pictures of the scene I was watching —how Bleriot was now seated in his cockpit; how his little three-cylinder air-cooled Anzani motor was being run up, and how the airman was now just taking-off on a trial flight.

Actually, what I did up there (although I did not realize it at the time) was to give the first of all outside wireless broadcasts, for what I was saying was immediately wirelessed across to Dover, and from there went straight on by 'phone to newspaper offices in London.

I had been five weeks on the French coast prior to that history-making morning. Three competitors had entered the field in attempts to win the £1,000 prize Lord Northcliffe had offered for the first heavier-than-air craft to cross the Channel. The Comte de Lambert, coming to Wissant with a Wright biplane, had crashed in a trial flight and



Unlike some of the photographs published at the time, this is a genuine view of the little monoplane as it crossed the sand-dunes at Les Baraques and headed out across the Channel. The next photograph, reproduced above, was taken 37 minutes later, as Bleriot crossed the coast near Dover.

"Where *is* Dover?" . . . .

written his machine off, though he himself escaped injury. Then Hubert Latham, who flew always with such abandon that one French journalist wrote that every time he went up he had "death at his elbow," had made a first bid for the prize, in his big Antoinette monoplane, only to be brought down in mid-Channel by damp affecting the ignition system of his engine. Fortunately the sea was calm, and Latham made a good pancake landing. And there his monoplane floated while he himself, tucking his feet up to avoid the water that was seeping into his cockpit, smoked a cigarette while he waited for an escorting torpedo-boat to pick him up. His monoplane was badly damaged while being salvaged, and he sent an urgent message to Paris for a reserve machine. It quickly arrived, and both he and Bleriot were ready for a Channel flight on the morning of which I am writing.

Bleriot had been staying at the Terminus Hotel on the quay at Calais, where I myself had a room. Latham was at a little hotel just below Blanc Nez, not far along the coast. On going to bed, on the night prior to the 25th, Latham had asked some of his friends, who were also at this hotel, to get up early on the following morning to see what flying prospects were like. They did so and, finding a gusty wind already blowing, with the probability that it would freshen as the morning advanced, they decided that there was no likelihood of flying that day, and so made up their minds not to call Latham, who was still asleep.

Rival's Misjudgment

Even when news reached them that Bleriot, whose camp was a mile or so away, had just brought out his machine, they reckoned he was only going to make a short trial flight, and that the wind would prove too much for him. But here they reckoned without the determination of this formidable rival. On landing from his trial, and after a brief consultation with his friend Leblanc, Bleriot decided there was just time for him to get across to Dover before the wind rose to any really troublesome extent. So he decided, there and then, to make a dash for it.

There was one moment, just before Bleriot took off, that needs recalling.

Standing up in his cockpit, and peering out across the Channel, he bent down to Leblanc, who was standing just beside his machine, and asked somewhat anxiously:

"Where is Dover?"

Leblanc waved an arm in approximately the right direction, and a moment or so later Bleriot was airborne, flying out low above a road running along the coast. He had neither map nor compass, and just steered in what he reckoned the right direction, while after him, steaming at full speed, went an escorting French torpedo-boat.

The airman soon lost sight of this vessel, and just went on flying out towards mid-Channel, with no ship or guiding craft of any kind in sight. Before long he had a fresh anxiety. That little motor of his had never before run for more than about 20 minutes without getting overheated and losing power. But on his Channel crossing he knew he would have to be in the air for half an hour at least. And sure enough, just when he was nearing mid-Channel, his engine did begin to show the familiar symptoms, and the monoplane started to lose altitude, the waves of the Channel drawing unpleasantly close below. But Bleriot's luck, as a pioneer, had always been proverbial. He had emerged safely from crash after crash in experimental machines. And on that epic Channel flight good-fortune certainly came to his aid again. Just when things were looking really serious a rainstorm swept up the Channel, and the colder rain helped to cool the overheated little engine. It picked up again and Bleriot was able to fly on till he sighted the English coast.

Gusty Landfall

He then found he had been steering rather wide of the mark, and was approaching St. Margaret's Bay. Turning and flying up the coast, he spotted an opening in the cliffs and swung in to land. But the wind had been rising all the time, and was now blowing in heavy gusts. One of these caught Bleriot just as he was landing, and he came down rather heavily, damaging his undercarriage and breaking his airscrew. And there he sat in his cockpit, just below Dover Castle, first man to cross the Channel by aeroplane. Overhead seagulls wheeled, and presently a policeman came running from a neighbouring cliff road; after which a car dashed up from Dover. Bleriot had made the Channel crossing in 37 minutes.

When the airman came back to Calais that evening in the torpedo-boat which had followed him across Channel I had a long talk with him. I remember him saying how amused he had been when, soon after he landed at Dover, a decidedly worried-looking Customs officer had appeared on the scene, complete with a big batch of official forms. He wanted to make certain Bleriot had not brought any contraband goods across the Channel with him by air, and among the forms the airman was called upon to sign was one to the effect that his "vessel," of which he was described as the "master," was free from anything in the nature of infectious disease.

Bleriot's famous flight had a profound influence on public opinion throughout the world. To our British public it certainly came as a shock, because it showed them that our Navy could not be expected to protect them from any

A stone memorial, roughly in the plan-form of the machine, now marks the spot at which Bleriot landed. On the right, the author of this article is seen, with Charles Gardner of the B.B.C., recording a talk on the Channel flight, to be broadcast on July 27th in the "Eye-witness" programme.

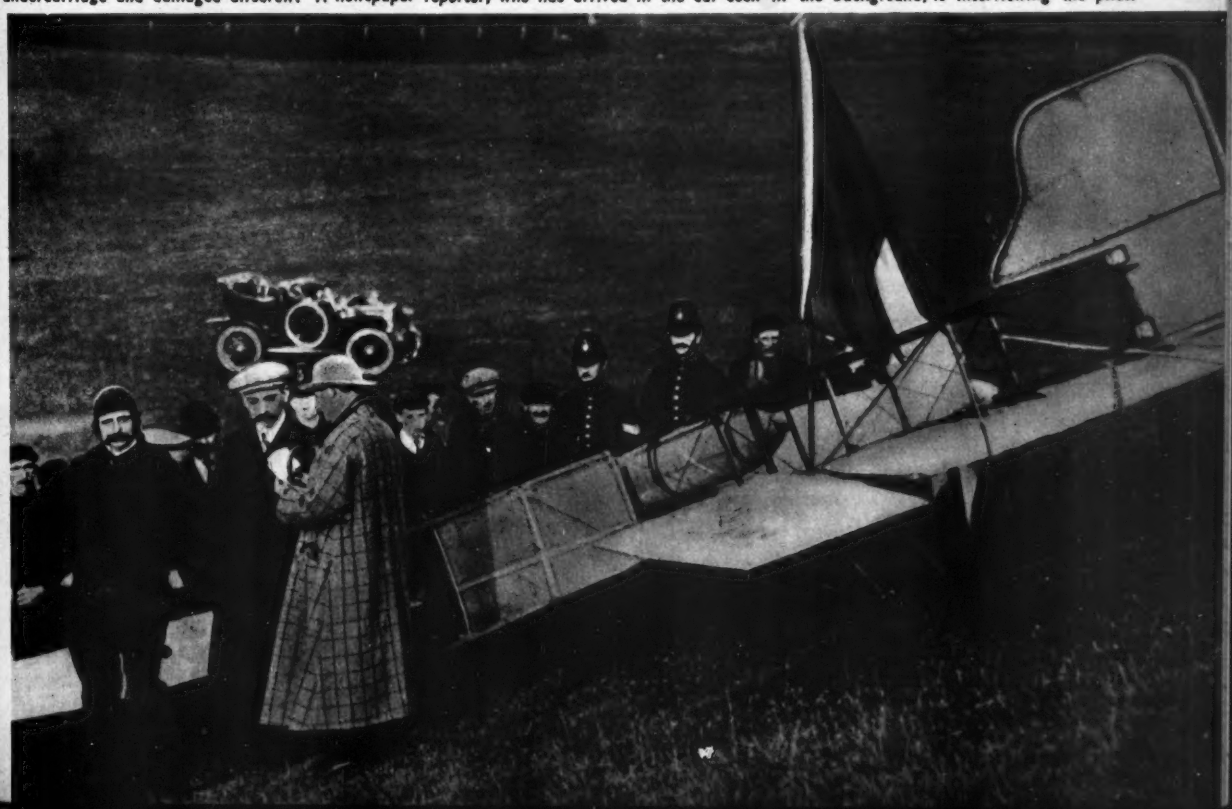
form of invasion of the future which might come by way of the air. And it did something more than that. It made our naval and military strategists sit up and take notice. They realized that the flying machine could no longer be looked upon just as an inventor's toy, and that its influence on strategy and tactics must now be taken quite seriously into account.

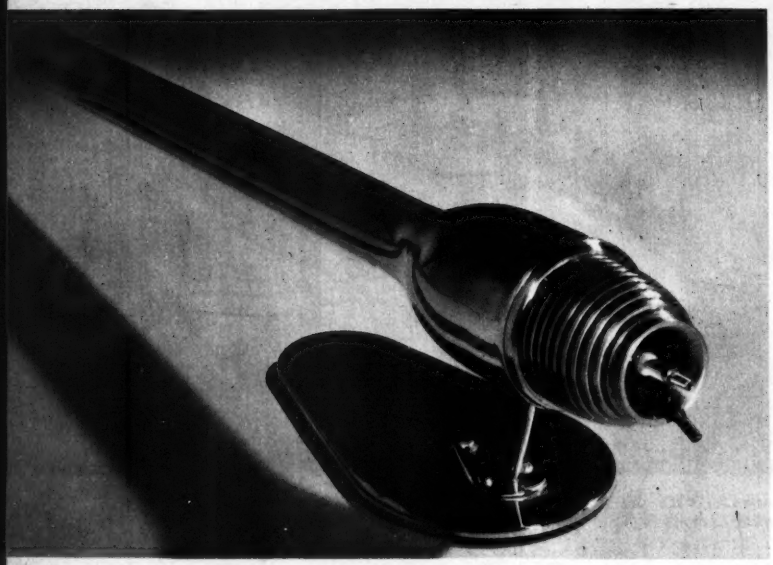
What the flight did, more than any other had done, was to mark clearly and definitely the dawn of the age of the air. But I do not think any of us, watching that tiny machine vanish above mid-Channel early on that morning in 1909, imagined that in less than 40 years from then armadas of bombers would be laying waste cities and munition areas, that pilotless flying bombs would be streaming across the Channel, or that huge rockets would be crashing down in the London area.

It makes one wonder what another 40 or 50 years may bring. Such a great pioneer as Bleriot, though he realized well enough the grim possibilities the air conquest might open up, told me he was confident in his own mind that the ability to travel through the air at speeds impossible by land and sea would, in the end, prove a boon rather than a menace to mankind, promoting world understanding and making the peoples of the globe less and less inclined to resort to the folly of war. Bleriot, and others of the pioneers, were always most insistent in their long-range optimistic view of the air conquest. All we can hope, today, is that their prophecies may still come true. It is not too late, even now, for the world to make that universal, fully civilized use of flying which these great heros of the early days envisaged so clearly.

Anniversary celebrations in connection with Bleriot's flight are being held this week-end; details appear elsewhere in this issue.

A strong gust caught the monoplane as it came in over the cliffs near Dover Castle, and a precipitate landing on a grassy slope resulted in a broken undercarriage and damaged airscrew. A newspaper reporter, who has arrived in the car seen in the background, is interviewing the pilot.





The Dyna-Jet unit is so compact that, dimensionally, it offers few installation problems. Starting air is provided by a tyre-pump or air bottle. Petrol is the fuel.

MINIATURE PULSEJET

A 16-oz Model with Over 4.25 lb Static Thrust

NOT only does America hold the world's speed record for full-sized aircraft; she also holds it for models, at a speed of 179.03 m.p.h. The prime mover which has made such a velocity possible is a pulsejet unit called the Dyna-Jet Red Head—at present not generally available for purchase over here. At least one somewhat similar unit has been under development in this country, but for various reasons—including that of the noise it makes—the type has not so far received much encouragement, and the S.M.A.E. accords it no record category.

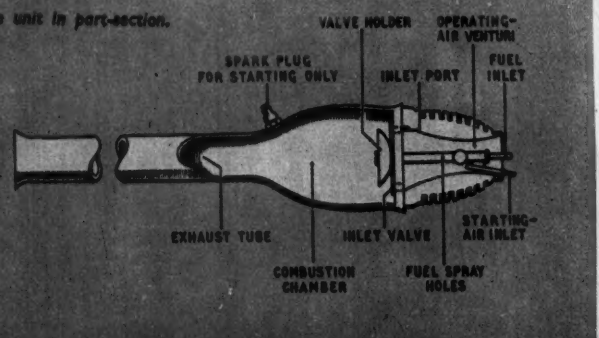
The pulsejet principle—which was used in the German V-1 flying bombs—is an essentially simple intermediate between the relative mechanical complexity of the turbojet and the mathematical complexity of the ramjet. Reference to the cut-away view of the Dyna-Jet will clarify understanding of the operational cycle. Air enters the mouth of the venturi inlet in the finned aluminium nose-cap, and the depression in the throat causes fuel to spray through the feed pipe on the venturi axis. The combustible mixture thus formed flows through a ring of ten valve ports, past the lobes of a spring-steel valve covering the ports, to enter the combustion chamber. On ignition by the starting plug, the resulting pressure-wave first causes a negative pressure, so drawing another metered charge of fuel and air through into the combustion chamber, and then changes to a positive one, closing the valve and firing the new charge by the residual heat remaining from the previous combustion. The process is repeated automatically so long as fuel and air are supplied, the frequency in the case of the Dyna-Jet being 260-280 cycles/sec.

With a maximum diameter of 2.5in, an overall length of 21.5in and a weight of 16 oz, this unit is claimed to deliver something over 4.25 lb static thrust. Consumption is 2.5 lb/hr/lb thrust, the fuel being ordinary unleaded petrol.

When a Dyna-Jet is installed in a model, adequate insulation must be provided against heat transfer, for the combustion chamber and tail-pipe become red-hot about five seconds after starting. As we can testify from experience, these tiny units make a most penetrating noise—so much so in fact, that it is literally painful at a range of about 10 yards and can, moreover, be heard across an airfield, in the cockpit of a Tiger Moth, above the noise of an idling Gipsy engine.

Below are seen Dyna-Jet installations for control-line model aircraft and cars ; at the foot of the page is a scale model of the Bell X-1 supersonic research aircraft.

The unit in part-section.



THE NATIONAL AIR RACES

R.Aux.A.F. Race Entries : Colours to be Carried

DETAILS of the seven entries for the R.Aux.A.F. race, to be contested on National Air Race Sunday (July 31st), for a bronze trophy given by W/C. G. Cooper, M.P. for Middlesbrough West, have now been announced and are set forth below.

For the purposes of the race, the Auxiliaries are retaining their Reserve Command group designations, though they are in process of being re-absorbed into Fighter Command.

Various methods of selection of pilots have been employed. Nos. 61, 63, 65 and 66 Groups held informal eliminating races in their own areas; 64 Group drew squadron numbers from a hat, and the C.O. of the lucky squadron—No. 607 (County of Durham)—then selected a pilot. In the case of R.A.F. Northern Ireland and 62 Group, pilots were selected by the A.O.C.

Competing aircraft comprise a Meteor 3, Vampire 1, three Spitfire 22s and two Spitfire 16s. The race will be a handicap over four laps of the 20-mile Elmdon circuit, and the aircraft will fly fully equipped except for ammunition. Details of the entries are as follows:—

No. 61 (Eastern Reserve) Group.—S/L. H. C. Kennard (Meteor 3). S/L. Kennard, who is C.O. of No. 500 (County of Kent) Sqn., won an eliminating race in which one other pilot of his own squadron and two from No. 615 (County of Surrey) took part.

No. 62 (Southern Reserve) Group.—F/O. E. B. Smith (Vampire 1), of No. 501 (County of Gloucester) Sqn.

No. 63 (Western Reserve) Group.—F/O. A. B. Mercer (Spitfire 22). F/O. Mercer, of No. 610 (County of Chester) Sqn., was the winner of an eliminating race in which one aircraft was entered from each of the following squadrons: 605 (Warwick), 611 (West Lancs), 613 (Manchester), 614 (Glamorgan).

No. 64 (Northern Reserve) Group.—F/O. I. Baxter (Spitfire 22), of No. 607 (County of Durham) Sqn.

No. 65 (London Reserve) Group.—S/L. H. S. L. Dundas, D.S.O., D.F.C. (Spitfire 16). S/L. Dundas, who is C.O. of No. 601 (County of London) Sqn., won an eliminating race between himself and F/O. K. Hazelwood, of No. 600 Sqn.

No. 66 (Scottish Reserve) Group.—Plt. I Royan Yule (Spitfire 16), of No. 612 (County of Aberdeen) Sqn.

R.A.F. Northern Ireland.—F/L. John Newell (Spitfire 22), No. 502 (Ulster) Sqn.

A late addition to the supplementary regulations for the Races is one that should add in some measure to their spectacle value, though that is not its true purpose. This is to the effect that aircraft are to carry racing colours in addition to their numbers.

When the entry lists were complete it was realized that there were a great many machines of identical or very similar appearance and colour and the race committee felt that it would be a difficult task for the judges to distinguish them quickly by their racing numbers alone.

Competitors have therefore been requested to paint 36in vertical bands round the tails of their machines, either one band of one colour or two of contrasting colours. Eleven shades have been selected, and each competitor has been allotted his own colour or combination of colours. Certain aircraft of an unusual or distinctive appearance, represented by only one entry in each race, have been exempted from the new rule; among them are the Comper Swift, D.H. Chipmunk, Short Sealand, Mosscraft and Hornet Moth. The requirement has also been waived in the case of several otherwise similar machines completely finished in differing colour schemes.

The Miles Whitney Straight entered by H.R.H. Princess Margaret, and to be flown by G/C. Peter Townsend, will be among those without tail-bands. Apart from being the only representative of its type, it is already distinctively finished in blue and gold.

It is typical of the extremely thorough organization of the Races that the eleven colours are explicitly specified by their numbers in the British Standards Institution scale No. 381C, 1948. Competitors are also advised to use paint specially made for such purposes by the well-known aircraft-finish manufacturers ; it can be easily removed after the race without damage to the finish beneath.

Disappointment will be caused by news of scratchings from the all-jet race for the S.B.A.C. Challenge Cup: The Vickers-Armstrongs 510 is not to compete. The reason, given by the makers, is that official flight-trials will be in full progress at the time and these, of course, must have precedence. The Meteor 7, which was to have been flown by the late F/L. Dryland, will not take part and there also seems some doubt whether the Hawker P.1052 will put in an appearance.

FULLY FASHIONED SECURITY

WELL known as specialists in locknut design and manufacture, Simmonds Aerocessories, Ltd., announce the development of the Simmonds Nylon Nut as a variant of the essentially similar and well-established Elastic Stop Nut. Nylon has been introduced as an alternative to the elastic fibre used in the manufacture of the special insert.

Comparisons with the endurance characteristics of the all-metal nut show that the nylon nut has considerable advantages in its ability to adjust itself to thread irregularities. The nut, it is claimed, possesses good dimensional stability under varying conditions of temperature and humidity extremes, while at the same time being impervious to all oils and boiling water. Nylon nuts have been fully approved for use in aircraft construction and are interchangeable with, or alternative to, the existing A.G.S. range of all-metal self-locking nuts.

An interesting development is the production of the nylon nut in cap form. The self-locking insert and cap are an integral moulding which affords a completely leak-proof seal, an important advantage for special applications such as pressurized chambers, fuel tanks, and so forth.

ILLUMINATED LETTERING

AN addition to the interlaminate printed and standard engraved signs made in Traffolyte, a laminated plastic by Thomas De La Rue and Co., Ltd. (Plastics Division), is now available in the form of translucent engraved material.

Used mainly for signalling and electrical equipment, navigational instruments and signs in dark rooms, lettering in this material is engraved so that it appears against a contrasting background when lit from behind.

Engraved Traffolyte is available in black or white for the opaque section with contrasting translucent lettering in ivory, red or green.

MET. FOR THE MASSES.

"Signpost to the Weather." By D. and K. Bartlett. Edward Stanford, Ltd. Price 3s 6d.

FORECASTING the weather for the general public still appears to be anybody's game. To say this would, perhaps, be unkind to the Bartlett brothers were it not for the fact that they themselves have set out to demonstrate that truth in this little book. Indeed, they say to the reader: "You can make a long-range weather forecast. It is easy."

They go on to explain the "Bartlett Weather Expectations"; the general trend of the argument is that if the present weather is unlike these expectations it is going to be different from them for some time; but that slightly more often than otherwise the weather does conform with the expectations, which are based on an analysis of conditions within the last 50 years.

Now, we all agree that it is warmer in summer than in winter, but when it comes to implying that the second week in August is likely to be more free from thundery showers than was the first, the differences involved are of such a magnitude that it will need more than 50 years' records to prove it—and at least that much expectation of life left in the reader to derive appreciable benefit from it.

The Meteorological Office uses a projected analysis of synoptic development, but until such time as the forecasts which they produce for popular consumption show themselves to be outstandingly superior there will be thriving private enterprise.

One of the great difficulties in getting a forecast across is that, although the topic is never far from their lips, the public know little about the weather elements and their workings. This little book presents many facts in a simple language and with workable accuracy. On this score alone, and in the absence of a comparable official publication, it is to be commended.

J. C.

TWO FRENCH LIGHTWEIGHTS

Cabin Two-seater Monoplane and Biplane

TWO interesting little French two-seat light aircraft which have recently obtained their *Certificats de Navigabilité* are the G.Y.20 Minicab monoplane and the LD.216 Midgy-Club biplane, both powered by 65 h.p. Continental motors and intended (somewhat unfortunately to English ears) for the *vulgarisation des sports aériens*.

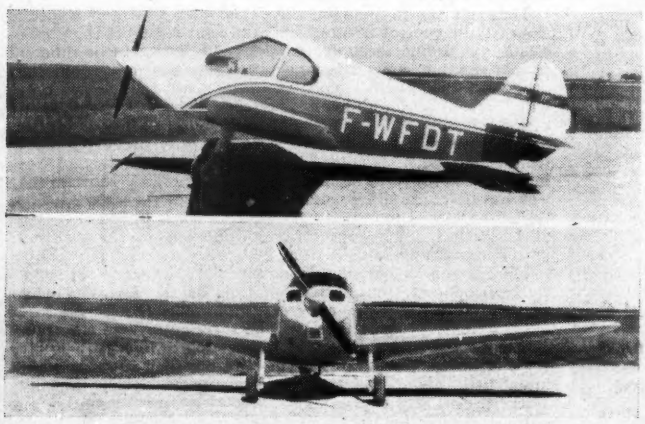
The Minicab, produced by a recently formed company, Constructions Aéronautiques du Bearn of Pau, originates from the same designer as did the S.I.P.A. 90, which, it may be recalled, won the Concours des Biplaces Légers organized by the French Air Ministry and held in July, 1947. Although appreciably smaller than the S.I.P.A. product, the Minicab bears a marked family resemblance to the S.90, both in regard to contours and to flight characteristics, and is one of the smallest two-seaters built to-date. Its light weight, combined with its 65 h.p. Continental engine, give it a very lively performance.

Basically a low-wing cantilever monoplane with a fixed-tail wheel undercarriage, the Minicab has a wooden structure covered by fabric. Accommodation is for two persons seated side-by-side, and a swing-over (forked-stick-type) control column and dual pedals are provided. The instrument panel is neat and uncomplicated and view over the neatly cowled engine, which drives a two-blade Merville airscrew, is good at all times.

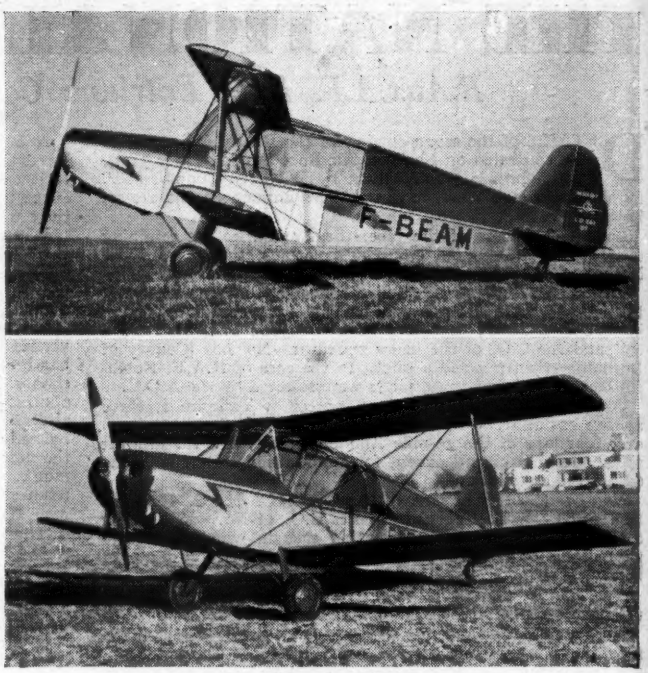
Fuel Economy

The Minicab should prove inexpensive to operate, as fuel consumption is exceptionally low—in fact, the prototype is said to have flown 100 km (at 1,700 r.p.m.) on 7.8 litres (36.2 miles/gall). The tentative price quoted for a standard machine (at the present rate of exchange) is £1,094—although this could be reduced by quantity production—and a *de luxe* version, featuring such refinements as wheel spats, etc., will sell for £1,113.

Leading particulars are as follows: Span, 25ft 8½in; length, 16ft 10½in; height, 5ft 5in; wing area, 107.758 sq ft; empty weight, 584 lb; loaded weight, 1,047 lb; maximum speed, 124.3 m.p.h.; cruising speed, 111.8 m.p.h.; landing speed, 46.6 m.p.h.; climb at take-off, 639 ft/min; climb to 1,181ft, 2 min; practical ceiling, 16,404ft; take-off run, 426ft.



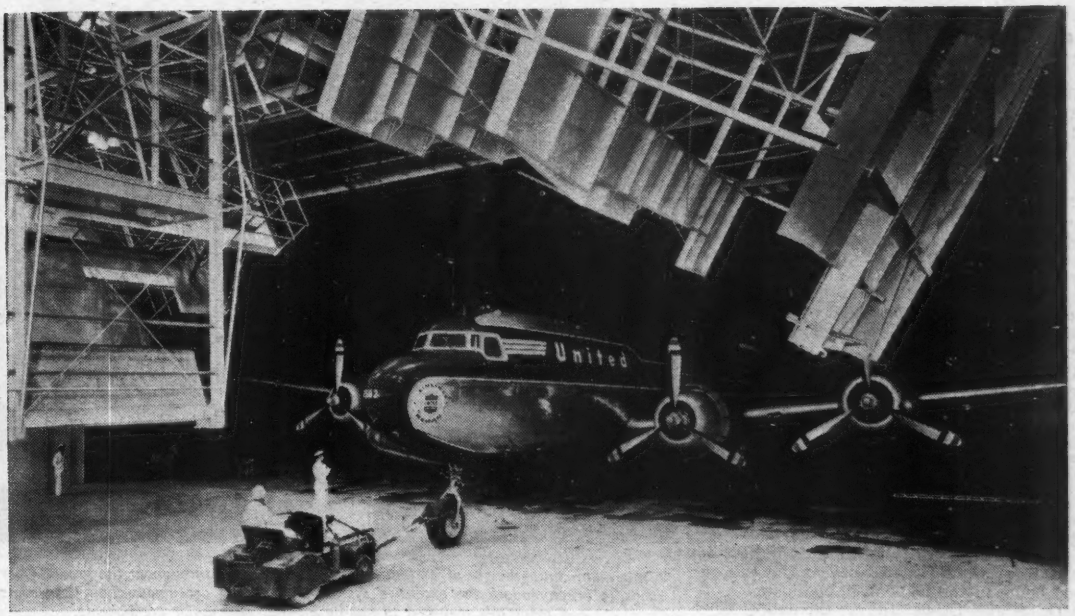
In spite of its small dimensions—25ft 8½in span by 16ft. 10½in length—the Minicab monoplane seats two side by side in reasonable comfort.



A newly designed biplane is a rarity in these days. The LD.261 Midgy-Club is built to sell at the equivalent of £1,010 with Continental A-65 engine, or at £201 for airframe only. Upper and lower main planes are interchangeable.

The LD.261 Midgy-Club is built by an instrument firm, Instruments de Précision M.D.G. of Garches, and is the result of development work carried out by M.D.G. technicians on the pleasant little single-seat LD.45 displayed at the 1946 Paris Show and designed by the Société d'Etudes et de Constructions d'Avions de Tourisme. The Midgy-Club is a single-bay staggered biplane, primarily of metal construction. The upper and lower wing panels are interchangeable and the entire trailing edges are hinged; there are slotted flaps on the upper wings, and slotted ailerons on the lower wings. The tailwheel undercarriage is fixed and all springing in the main undercarriage is enclosed in the wheels. Accommodation is for two persons in staggered seats, and a cranked control column and dual pedals are provided. Although the photographs above give the impression that the pilot's view must be exceptionally good, it does, in fact, leave something to be desired so far as take-off is concerned. In flight, however, it is considerably better.

The Midgy-Club, powered by a Continental A-65 engine, sells for £1,010, but if the customer prefers to install his own engine (alternative power plants are the Mathis G-4F and the Minie 4DC) the Midgy-Club can be supplied *sans* motor for £801. Leading particulars of the machine, with Continental engine installed, are as follows: Span, 22ft 11½in; length, 17ft 10½in; height, 6ft 5in; gross wing area, 114 sq ft; weight empty, 701 lb; weight loaded, 1,192 lb; maximum speed, 111.8 m.p.h.; cruising speed (75 per cent power), 99.4 m.p.h.; landing speed, 46.6 m.p.h.; climb at take-off, 551 ft/min; practical ceiling, 15,747ft; take-off run, 442ft; fuel consumption at cruising speed, 3.6 gall/hr. W. G.



The most striking feature of the United Air Lines base is the arrangement of maintenance-stagings, or catwalks, which at the touch of a button can be lowered to surround the aircraft—in this case a DC-6 Mainliner.

MASS-PRODUCTION MAINTENANCE

Spectacular Equipment Used by United Air Lines at New San Francisco Base

By ROBERT RUSSELL

IN the last 22 years United Air Lines, the U.S. domestic operating company, has flown some 10,000,000 passengers over a total distance of 5,000,000,000 passenger-miles. Its 10,700-mile system, serving 80 cities in 22 states, the District of Columbia, Hawaii and British Columbia, extends from coast to coast along the Pacific and across to Honolulu. With an organizational strength of 11,000 persons and a fleet of 147 aircraft, the company also claims to have in operation one of the latest, "fastest" and most efficient maintenance bases in the world.

The base—which forms the subject of the accompanying illustrations—has been built in the Bay area of San Francisco. Its establishment means that all maintenance work on all the Company's operational types of aircraft can now be carried out at one place. The Mainliner DC-6s and DC-4s, together with the DC-3s, are serviced, and the equipment of the old base for DC-3s at Cheyenne has been transferred there also.

The term "push-button" has been used by the American Press to describe this new overhaul base. The description is not unmerited when it is realized that a completely new conception of maintenance has been evolved, combining the experience of many years. The plant is equipped with such accessories as a complete range of folding steel catwalks which can be raised and lowered from the hangar roof; they are arranged in such a manner that, lowered into working position, they can completely encircle a DC-6. In this way it takes only ten minutes from the time one of the airliners is towed into the hangar until it is actually being attended by the mechanics. The hangar door, which weighs 51,400 lb, is 35 feet in height, and can be raised to the ceiling, by the press of a button, in a matter of 15 seconds. Also raised and lowered by push-button is a massive staging which provides three working levels in the form of separate catwalks. All levels are connected by elevator and ladder. Two other huge catwalks designed to run parallel to the entire length of the fuselage of a DC-4 or DC-6 are also lowered in a matter of seconds. The "tail dock," as these folding trestles are sometimes called, hinges downwards once the machine is in position and fits closely round the tail unit. In the event of different lengths of aircraft being used the tail dock can move forward or backward as required.

All these catwalks are raised or lowered electrically. The tail trestle assembly weighs about two tons, but is lowered slowly and smoothly by powerful electric motors. After all the units have been put into position an hydraulically operated ramp is raised from the floor to the level of the cabin to facilitate removal of the interior fittings of the aircraft to an unloading platform along the side of the hangar walls.

Not only does this arrangement make maintenance possible at any level but it enables work to be begun in the quickest possible time, while eliminating obstruction of the floor by the usual staging supports. Once everything is in place, engineers are able to begin the work of removing engines, which are electrically hoisted from their positions into other departments.

Other unusual features of the base include elevators which connect forward working levels with the cleaning and overhaul shops; built-in oil and grease drainage pits to provide complete cleanliness; a glareless daylight illuminating system using both mercury-arc and incandescent lamps; a floor-mounted lighting system to direct light upwards, and a special paint-colour scheme to make the best and most active use of the lighting systems. Each hangar or

Mass-Production Maintenance

department is coloured in varying degrees of shades of blue, grey or green, and emphasis is placed on control and danger areas by the use of special colours—such as orange, yellow and red—for control handles, machine guards, machinery ramp equipment, etc.

The designers of the plant worked on an assumed work-load based on anticipated figures for seven years ahead. The physical design was planned around the normal flow of parts and units of equipment from one shop to another, and the entire concept was formed to ensure the most efficient flow of these parts from point to point. The whole area of the base covers 116 acres, and in a normal working day 11,200 man-hours are completed. Eleven Mainliners can be handled at a time and each machine, it is claimed, is completely converted to a virtually new aircraft in only four days.

Before going on to describe the procedures which are followed by the overhaul staff, it is advisable to say something about the frequency of the overhauls and the different degrees of inspection which are carried out. In the first place there is what is termed a complete overhaul, carried out at the end of 1,000 hours in the logbook in the instance of the DC-4s and DC-6s, and at the end of 925 hours in the case of the fleet of DC-3s.

A minimum ceiling-height of 23 feet has been maintained throughout the ground-floor shops to accommodate the extensive system of overhead continuous-chain conveyors and monorails installed to handle engines and major components.

No. 1 check, made at refuelling stops, includes refuelling; re-oiling; visual inspection of the aircraft exterior, airscrews, control surfaces and landing gear; a check of hydraulic-fluid levels; test of the oxygen supply and renewal of the supply if necessary; check of the fluid level of the airscrew de-icers, and renewal if required; drainage of the fuel-tank pumps and inspection for water or other foreign matter; test of cabin lights; and a check of the heating system.

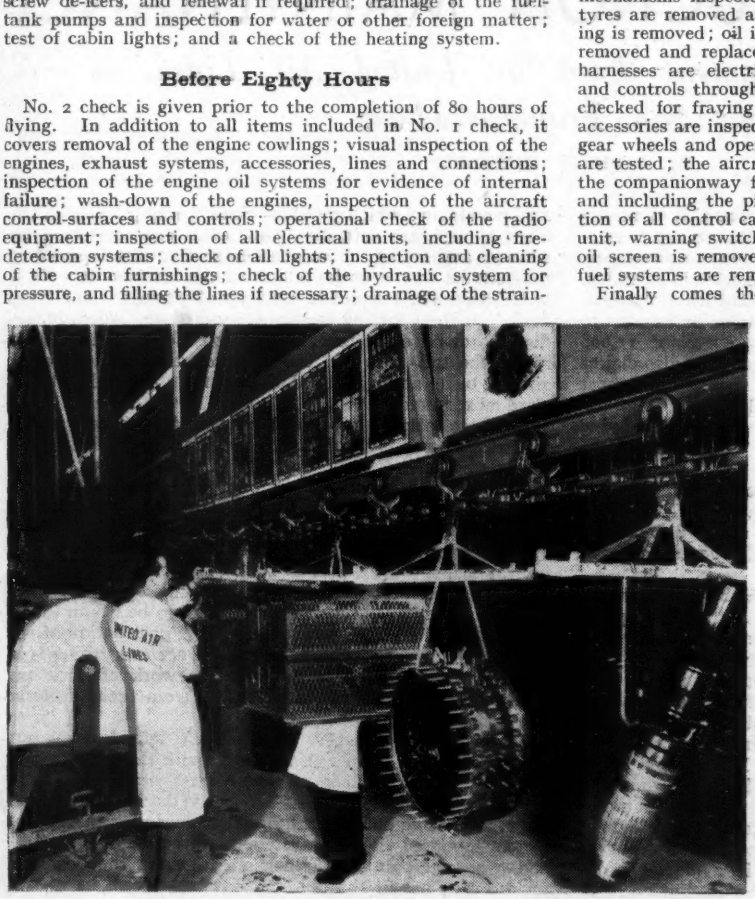
Before Eighty Hours

No. 2 check is given prior to the completion of 80 hours of flying. In addition to all items included in No. 1 check, it covers removal of the engine cowlings; visual inspection of the engines, exhaust systems, accessories, lines and connections; inspection of the engine oil systems for evidence of internal failure; wash-down of the engines, inspection of the aircraft control-surfaces and controls; operational check of the radio equipment; inspection of all electrical units, including fire-detection systems; check of all lights; inspection and cleaning of the cabin furnishings; check of the hydraulic system for pressure, and filling the lines if necessary; drainage of the strainers, and removal, inspection and recharging of the batteries.

No. 3 check is given prior to the completion of every 150 hours of flying, and includes all items in Nos. 1 and 2 checks plus the following: The aircraft is jacked up and the retracting mechanisms inspected and checked for operation; wheels and tyres are removed and wheels and brakes inspected; all cowling is removed; oil is drained and renewed; sparking plugs are removed and replaced by new or reconditioned sets; ignition harnesses are electrically tested; the entire engine nacelles, and controls throughout the aircraft, are inspected; cables are checked for fraying or damage; the entire machine and its accessories are inspected; certain features, such as the landing-gear wheels and operating mechanisms of the control surfaces, are tested; the aircraft is cleaned inside and out; flooring in the companionway from the forward part of the cabin up to and including the pilot's compartment is removed for inspection of all control cables, wobble-pumps, automatic-pilot servo unit, warning switches, and antennae terminals; the engine-oil screen is removed and cleaned; and the strainers of the fuel systems are removed and cleaned.

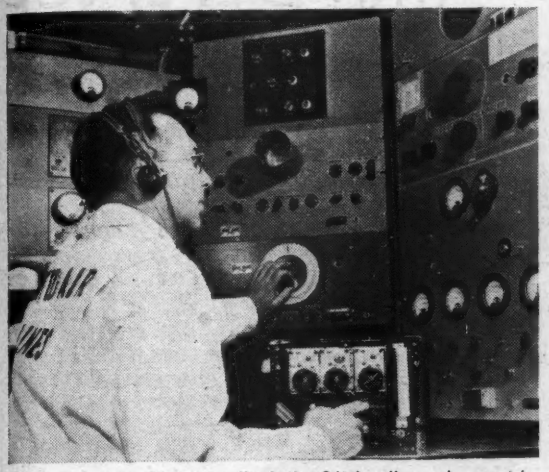
Finally comes the 1,000-hour check, which requires the machine to be completely stripped, every item tested and replaced if necessary, and then re-assembled again, making the aircraft equal to new in every way. It is this detailed check which has always to be carried out at the San Francisco base, and which is the reason for the new and up-to-the-minute procedure employed. Previously, the 1,000-hours overhaul took a long time and caused considerable delays by grounding aircraft for what appeared unnecessarily long periods.

To give some idea of the improvements made by the efficient operation of the new base, J. A. Herlihy, vice-president of United Air Lines, recently pointed out in a survey of the first six months of operation that there had been nearly a 300 per cent increase in the number of engines which had been turned out. Comparing the number of engines handled in a month, he said that 119 were now overhauled instead of 40. Most of the increase in efficiency could be accounted for by the new production-line stripping

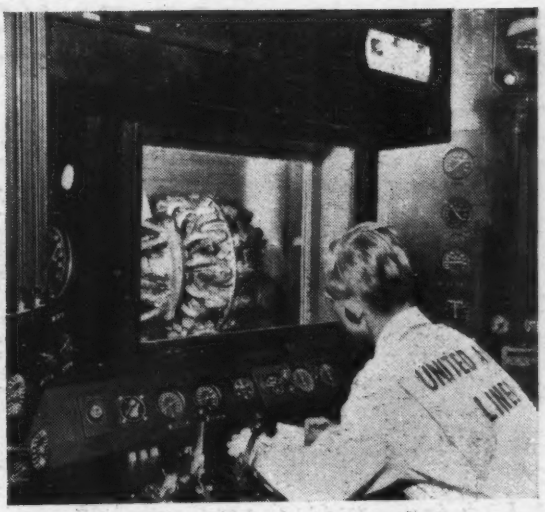


Engine components start their conveyor-journey towards the 160ft-long degreasing tank. Diagrams above the conveyor show standardized methods of arranging various parts in the baskets.

Mass-Production Maintenance . . . . .



Eight test and calibration cells, built of light alloy and screened with copper, are available for the overhaul of radio equipment.



Control-panel adjoining one of the six engine-test cells. Engines are run for about 4½ hours after reassembly.

schedule and the method of washing and cleaning engines. Part of the increase, however, was due to a rise in the number of maintenance men from 1,400 to the present 2,100. From the standpoint of man-hours, an engine could now be cleaned in 11 man-hours compared to 66 required by the old methods. In the cabin-overhaul department, in spite of an increase of 50 per cent of work, the general efficiency had been 15 per cent higher.

The vice-president's figures for engine overhauls are particularly interesting. In amplification, it can be said that there have been three engines in service on United routes, the Pratt and Whitney R-1830 of 1,200 h.p., the R-2000 of 1,350 h.p., and the R-2800 of 2,100 h.p. Towards the end of 1948, when the Stratocruisers went into operation, another model, the 3,500 h.p. TSB3-G Wasp Major, was added to the inventory.

At San Francisco many innovations have been made in the normal procedure for engine overhaul. A 160ft-long tank, shaped like a hairpin, is provided for the complete washing of the engines. Once the engine is removed from the aircraft it is blasted with high-pressure steam and solvent and then mounted on a trolley ready for removal to the "tear-down" section. During this process the electrical equipment is removed and sent to a special electrical department on the second floor. All the various sections of the dismantled unit are then attached to an overhead conveyor which carries them through a five-hour series of sprayings and washings in a hairpin-shaped tank 160ft in length. The tank contains 30,000 gallons of strong detergent solution which removes every particle of dust, grease and oil. When parts emerge, they are dry, clean and ready for inspection in another section of the shop; here they are checked for wear, in certain cases to limits of .0001in. Certain parts, incidentally, after removal from the bath, are taken to an enclosed chamber where they are blasted with air pressure carrying a compound consisting of finely ground nut-shells, which removes the last particles of embedded carbon or dirt but does not damage the metal.*

After inspection the engine parts are taken to the build-up shop, where they are reassembled on what might be termed a continuous moving line assembly. Meanwhile airscrews have been undergoing a similar type of cleaning, inspection and repair process and are ready to be balanced and fitted to the engines. After a final shop check the engines are transferred to one of six concrete enclosed test-beds, where they are put through tests simulating all types of flight conditions. Tests amount to four-and-a-half to five hours. Adjoining the engine test-beds is the huge fuel-metering equipment weighing a total of some 80 tons.

Final assembly of the engine in the aircraft and a four-hour test flight completes the overhaul process. It is interesting to note that after every five or six major overhauls of this nature, so many new parts have been added to the engine that it is virtually new throughout.

Additional operations at the base, taking place while the engines go through their own processes, include the overhaul and testing procedures carried out on the instruments, radio, electrical equipment, brakes, controls and external surfaces on the aircraft. The instrument department is fully air conditioned and the radio department is carefully insulated.

** This process is not altogether novel: for some years past, at B.O.A.C.'s engine and airscrew overhaul base at Treforest, South Wales, light-alloy parts which carry hard carbon or impacted sand have been air-blasted with an abrasive consisting of ground apricot-stones.*—ED.

DEATH OF RODNEY DRYLAND

AS the result of an accident while testing a Meteor 4 at Moreton Valence on July 13th, F/L. Rodney Dryland, D.F.C., acting chief test pilot of the Gloster Aircraft Co., lost his life. Although Dryland had been with Glosters for rather less than three years, his charm of manner, enthusiasm and skill had endeared him to a host of friends in the industry and abroad. He was quite exceptional in many ways.

F/L.R. Dryland, D.F.C.

At the time of his death he was 27 and had been flying for some nine years. After finishing his flying training in Rhodesia in 1941, he did a year's ferrying in the Middle East before going to No. 3 Squadron in 1943. While with the squadron Dryland shot down four enemy aircraft and 21 flying bombs and was himself shot down in December, 1944.

To Mrs. Dryland and her young daughter we offer sincere sympathy.

NEW BRITISH GAS TURBINES

OF primary interest among British power plants just announced is the Sapphire AS Sa. 1 turbojet, the prototype of which was designed and built by Metropolitan-Vickers, though development has been transferred to Armstrong Siddeley Motors, Ltd. Any Sapphire production which might be authorized would be an Armstrong Siddeley commitment, and in this connection, the firm's rapidly mounting experience with axial-flow gas turbines may be significant. Full details of the 3,650 s.h.p. Python ASP. 3 are shortly to be published.

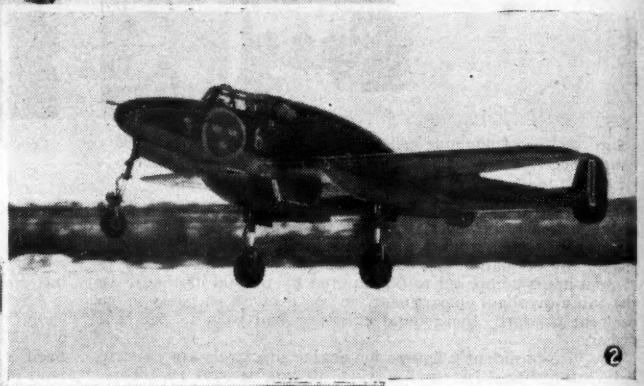
From de Havillands comes news that the Goblin DGn 4 turbojet of 3,600 lb static thrust differs from earlier Goblins in having turbine blades of Nimonic 80A, instead of Nimonic 80; improved air-feed cooling for the turbine wheel; flame tubes of a new pattern, to permit higher working temperatures; a single-unit fuel pump; and a smaller tailpipe nozzle. A similar Goblin—the Mk36—is being submitted for civil-type approval.

Of 2,970 s.h.p., the Napier Coupled Naiad N NaC. 1 has not yet run as a complete unit, though considerable experience with individual Naiad units and the common gearbox has been built up during recent months.

FOR SWEDEN'S AIR DEFENCE

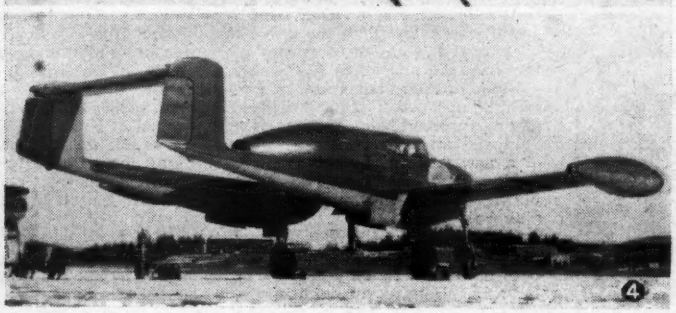
Arctic Practice for Men and Machines : Some Cool Scenes for Hot Weather

SAAB 17 reconnaissance bombers form the background to these four J-21A fighters belonging to F.6 Royal Vastgota Flygflottilj of the Swedish Air Force.



Note the central bomb rack on this J-21A fighter. When the aircraft is parked, tailored covers are used to protect the whole machine from ice.

For cooling during ground-running pure water is fed from drums to the Jumo 600 power unit. Special starter trolleys are required in extreme cold.



A Goblin-powered SAAB 21R, one of Sweden's two jet fighters here shown fitted with its wing-tip long-range tanks.

EACH winter units of the Swedish Air Force fly to the far north of their country for special training and experience of operation under Arctic conditions. These photographs (with the exception of No. 4) were taken in February at Kalixfors airfield, near Kiruna, in Swedish Lapland.

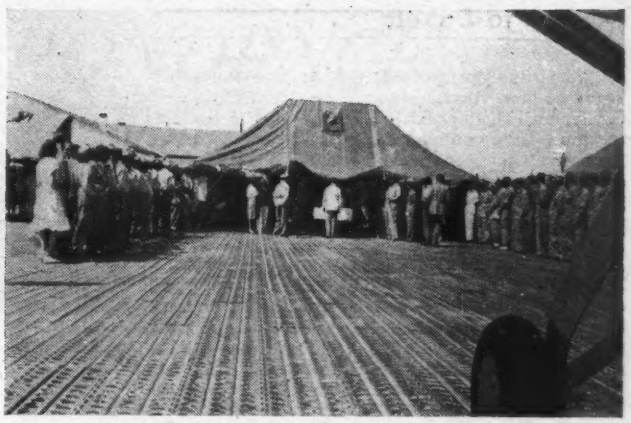
At this time last year, following a visit to Sweden, *Flight* described in one of a series of articles the equipment and training of the Swedish Air Force, making special reference to its Vampire fighters, which are also operated from Northern bases such as Kallax airfield.

The aircraft depicted in three of the accompanying photographs are J-21A piston-engined fighters, while at the foot of the page is the J-21R jet-powered variant, the features and handling of which were described in the June 24th, 1948, issue. Sweden obtains much invaluable information—e.g., heating and starting of piston and turbine engines, and handling on ice—from these manœuvres.

DONKEY TO DAKOTA

What Air Travel Means to the People of Greece

By A. E. G. RUMBELOW



The beginning: The original "office" of T.A.E., the first company to operate in Greece in September, 1946. Note the war-time P.S.P. "tarmac".

THE degree of progress expressed in the heading is a long stride in anyone's imagination, but it is one to which the predominantly peasant population of Greece has become accustomed in an unusually short space of time. In a country of such rugged and forbidding topography it is obvious, even to the most undiscerning layman, that the facilities of air transport are not only convenient but essential. Greece is a land of remote provincial towns and uninviting mountain ranges. Most of the mountain territory is occupied by murderous gangs of political bandits—a prospect hardly encouraging to the would-be traveller.

In 1946, while the country was struggling to recover from the crippling effects of World War II, and to re-open lines of communication in a land where a self-respecting British cart-horse would turn up his nose at what was supposed to be a major road, a well-organized and imaginative effort of local enterprise produced a nucleus of the present extensive internal airline system. Since then the development of air transport in Greece has been, to say the least of it, meteoric.

It all started modestly enough. With capital (£450,000 dollars) borrowed from the American Trans-World Airline Company and equipped with two Dakotas and a large tent, the T.A.E. Company* commenced operations in September, 1946. The crews and ground staff were for the most part drawn from the original Greek personnel of the wartime R.A.F. Transport Command 216 Squadron in the Middle East, and trained at Cairo by American instructors to I.C.A.O. standards. Within ten months their fleet had increased to ten Dakotas and a Fairchild Argus. The loan was repaid in full, although T.W.A. still retained a 35 per cent interest in the capital. This company is now operating 22 routes, one of them external and another with services flown five times daily. The hitherto unknown advantages of air travel have won the Greek from his donkey completely!

An extract from the traffic summary of one company alone is convincing proof of the public's enthusiasm for air transport:—

	1947	1948
Total passengers carried ..	67,566	186,800
Total freight carried	2,155 tons	4,780 tons

The possibilities of such a traffic potential were not lost to other European operators and local opportunists in general. In 1948, the E.L.L.A.S. Company, a subsidiary of Scottish Aviation, was formed, with 70 per cent British crews. This airline is now using five Dakotas and one Liberator, the last-named aircraft on a direct United Kingdom service.

The nation was becoming air-minded with a vengeance. Greek capitalists, eager for quick profits, rushed to invest money in local airlines. Even the Government, not to be outdone, subscribed part of the pensions fund of the military services to the capital of E.L.L.A.S. A third airline, A.M.E., has now appeared, which has mushroomed practically overnight from one ancient Anson to a Junkers 52 and, more recently, a Curtiss Commando; four more Commandos and two Skymasters, under charter from American operators are expected in the near future. It is also rumoured that the formation of two more companies is being attempted.

Cut-throat Competition

The State itself is thus involved and virtually classified as an operator, making it extremely difficult to draft any firm policy to restrict free enterprise to reasonable proportions. With licences to operate being granted almost indiscriminately to anyone who cares to apply for them the inevitable result of the competition thus produced has been to force the companies into cut-throat methods and drastic fare reductions and privileges. According to the managing director of one large company, the position has now become critical. Load factors are steadily decreasing and all of the companies are, in his own words, "gliding down at a fast rate of knots—some of them more steeply than others." Complicated internal political strife makes the outlook even darker for the airlines.

Meanwhile, the donkey is quite happy. With fares so low and so many airlines clamouring to transport his master, he can look forward to a pleasant sojourn in the fields. For his own part, the passenger is gaily looking forward to the day when he will walk up to the booking clerk and collect instead of paying his fare for the privilege of having occupied an aircraft seat. Perhaps the government, in its keenness to support free enterprise, will even subsidize the companies' losses!

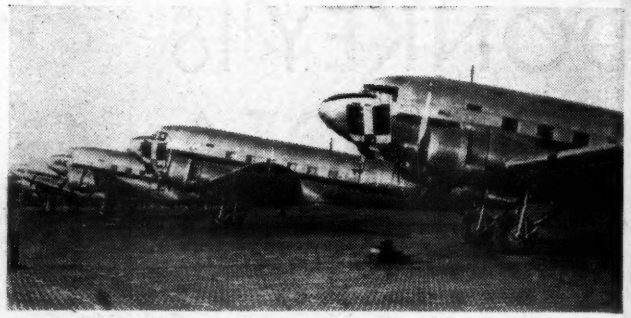
What of the facilities offered

The airport building at Larissa, a comparatively small town with a population entirely dependent on agriculture for its prosperity.

* *Technical and Aeronautical Exploitations, Ltd.*

Donkey to Dakota . . . . .

to the airline operators in this land of the gods? It was here that, about 4,000 years ago, a gentleman called Daedalus started all the trouble. He must have confined his flying to the shores of his native Crete, however, for he certainly does not seem to have left any of his airport facilities for the succeeding generations of aeronauts. It was necessary to call in Uncle Sam to provide them. Fortunately he responded to the call, and there are now at least six reasonable landing strips available, on which the local companies are constantly competing with each other to see who can produce the most elaborate terminal building and the most obliging hostesses. Ellinikon, at Athens, aspires to the ranks of first-class European airports, but its facilities are still far below the standard of most leading capital airports.



T.A.E. to-day—part of the company's fleet : its Dakotas and other aircraft now operate on 22 routes.

Uncle Sam, it seemed, was again coming to the rescue, in the guise of a C.A.A. mission to Greece. This was much publicized and long overdue, but it would appear now that its main objects are merely to improve the present unreliable M/F. range and to install a V.H.F. D/F. system.

At one time idle chatter could be heard in the crew-rooms at Athens of the probability of an I.L.S. or a G.C.A. system, but apparently this is not to be. The main difficulty is the present location of the airport, with a large mountain at one end of the runway and the sea at the other. Even these excellent aids are apt to be cold comfort under such circumstances on a really "soupy" day.

It is as well to appreciate some of the unusual difficulties which confront the airlines in Greece. Weather conditions are comparable, perhaps, to those of the Rhine valley, and are so unpredictable that many sorties are really a matter of "we'll have a try, anyway." The mountainous terrain is not conducive to maximum radio efficiency. The fact that the country is in the throes of a serious war does not improve matters. Aircraft have occasionally been hit by very light anti-aircraft fire while flying over high ground on recognized routes, and no pilot is every quite certain that he will not put down a perfect three-pointer plumb on the top of a land-mine which has mysteriously materialized in the night.

Considering the fact that external airlines have lost two aircraft and over 60 lives in flying in Greek territory in the last two years, the record of the local companies—one fatal accident involving passengers since 1946—is very commendable, especially when it is realized that the total number of sorties daily averages 45.

External traffic has also increased to the extent that there are now approximately 25 external operators making use of Ellinikon, and this airport now handles an estimated 2,400 passengers a day, including local services. This in itself is indicative of the fact that Greece has welcomed the advent of air transport as an essential method of communication and as a primary factor of its economic recovery.

For the future there are unlimited possibilities. In such a country, with its many small coastal resorts, towns and island villages handling a large proportion of its natural resources and minor industries, and its acute shortage of shipping, the prospects for the development of amphibious work are particularly bright. When a more stable state of internal security can be established, even the helicopter may be utilized to take the visitor to the countless places of historical interest in which the country abounds. The tourist industry could prove to be a great source of wealth if developed along sound commercial lines, but to date it has been sadly neglected. This was never more in evidence than when the writer, on a sightseeing tour of an ancient Roman city (reached with the greatest of ease by an amphibian but otherwise practically inaccessible), saw a small Greek urchin happily lighting a fire in what was reputed to have been Queen Cleopatra's bath-tub.

Possibilities are one thing, however, achievements are quite another. Air transport in Greece, so urgently needed and so popularly received, would appear to be approaching a state of hopeless confusion, caused mainly (as are the civil aviation setbacks in many countries) by the bungling antics—or complete absence—of a government policy. It is only to be hoped that happier days are ahead for a country which started to appreciate so keenly the value of aircraft as an essential part of its daily life. If not, it looks as if the donkey may once more have to work for his living.

TURBINES and ROCKETS

"Fundamentals of Gas Turbine Technology," by W. R. Thomson, B.Sc.Tech., A.M.Inst.C.E. Power Jets (Research and Development), Ltd., 25, Green Street, London, W.1. Price 25s.

THE author of this book is Chief Instructor of the Power Jets, Ltd., school at Lutterworth, and is thus especially qualified to deal with his subject matter.

The book itself is well produced on art paper and provides basic data in the several divisions of gas turbine design foundations. In that the intention has been to provide a textbook for engineers, scientists and students engaged in the gas-turbine field, the subject matter is necessarily given a mathematical treatment, but in each chapter the reader is taken from preliminary considerations to a relatively advanced stage, and the practical scope of the book is, in effect, widened considerably by the numerous references given throughout the text.

"An Introduction to the Gas Turbine," by D. G. Shepherd, B.Sc., A.M.I.Mech.E. Constable and Co., Ltd., 24s.

By virtue of its wider scope and more generalized treatment, this book provides an excellent complementary work to that by W. R. Thomson, reviewed above. It is clearly designed to strike an average between the plainly descriptive matter for the general reader and the technical reports and learned papers designed specifically for the specialist, and the author has been wise enough to introduce each topic with a brief explanation of the underlying fundamentals.

Additionally, a comprehensive bibliography is given at the end of each chapter, so that the reader is provided with references for additional literature considered to give not only the best all-round presentation, but also, in some instances, to provide information on design methods differing from those given in the chapters themselves.

"Rocket Propulsion Elements," by George P. Sutton. John Wiley and Sons, Inc., New York ($4.50); Chapman and Hall, Ltd., London (27s).

Compared with the vast amount of literature which exists in other branches of knowledge, there are few works which deal specifically with the many phases of rocket propulsion. The progress made in this relatively new field has been extremely rapid during the last decade, but, nevertheless, a number of principles and technical features are not yet widely understood, and this book serves the useful function of presenting basic elements and technical problems of rocket propulsion, and describing the physical mechanisms and designs of various systems.

Emphasis has in general been placed on a practical treatment of the subject by the inclusion of examples, problems and tabulated data, and each chapter has a bibliography.

CORRESPONDENCE

The Editor does not hold himself responsible for the views expressed by correspondents. The names and addresses of the writers, not necessarily for publication, must in all cases accompany letters.

FLIGHTS OF FANCY

—from Fleet Street: New Complaint on an Old Subject

CANNOT something be done to moderate the sensationalism and inaccuracies of the popular Press, whenever aviation matters are mentioned?

I am at present referring to the failure of the port outer engine on a Boeing Stratocruiser, belonging to Pan American Airways, on July 7th, between London and New York. Is it absolutely essential to impress on the public the erroneous idea that a four-engined aircraft with one dead engine is a death-trap? Is it right to terrify prospective air passengers out of their wits by describing a routine loss of height as "the aeroplane fell 15,000ft"?

Surely one could demand a higher standard of general knowledge than is displayed by a reporter mentioning a "fire in the *magnesium* propeller hub," or showing his utter amazement that the airscrew, having come off, fell down (presumably obeying the laws of gravity—or don't these exist for the Press?). Did the learned gentlemen in question by any chance expect the airscrew to be sucked into the air intake?

One must not under-estimate the serious harm done to commercial aviation by such reports. Should these persist, we will find that every passenger who happens to "survive" the hazards of a routine flight will demand (with justification) that he be awarded the Distinguished Flying Cross (Civil Division).

London, N.W.8. F. B. ADLER.

ROOKS HILL HOUSE

Vacancies for Fatherless Children of R.A.F. Personnel

From A.V.-M. Sir John W. Cordingley, K.C.B., C.B.E., R.A.F. (Ret.).

MANY of your readers are familiar with the work of Rooks Hill House, near Sevenoaks, which is a residential nursery school for fatherless children, between the ages of two and seven years, of officers and airmen who served as aircrew in the Royal Air Force. The school accommodates 20 children and is situated in the most beautiful countryside.

We are now able to consider further applications for admission. May I, through your columns, invite potential applicants to write to the Schools Secretary, R.A.F. Benevolent Fund, 67, Portland Place, London, W.1?

JOHN W. CORDINGLEY,
Air Vice-Marshal, R.A.F. (Ret.),
Controller, R.A.F. Benevolent Fund.

AIRFIELD NOISE

Local Residents and V.R. Training

I NEVER cease to marvel at the mentality of the people who complain about the noise of aircraft at airfields and airports near their homes. Provincial and local newspapers have been full of letters and answers to letters, but still the whines continue to flow in and get printed. It is more than probable that those who now complain about the noise would themselves be the first to make a big noise if our air defences were ever found to be wanting in the time of emergency.

Although to my mind the official apologies and reasons given for Sunday and night flying are more than adequate, there is one point which I have not seen mentioned concerning the V.R. and Auxiliary airfields. It is prompted by the attitude taken in many local-paper letters, which seems to suggest that the young pilots who fly at week-ends are not only paid handsomely for doing so, but take a delight in choosing this time to annoy the local residents. I think it should be pointed out to members of the public who do not understand these things that pay to V.R. pilots for taking their Tiger Moths round the sky "with a shattering roar" is negligible and is only intended to cover expenses, and, moreover, that these boys are voluntarily giving up their free time after a hard week's work.

Finally, it is not irrelevant to point out that many of those who complain took up their present residences in the full knowledge that there was an airfield in the vicinity.

London, N.W.4. A. JACKSON.

[Some observations on a kindred subject—the complaints of residents near an R.A.F. airfield from which jet aircraft operate—appear on p.86—ED.]

RADIO-CONTROLLED MODELS

An Outstanding Performance at Langley

I WAS interested to read the excellent account of the model-flying meeting at Langley which appeared in the issue of *Flight* for June 30th. No mention was made, however, of models which are controlled during free flight by means of a radio transmitter on the ground and a receiver in the aircraft which is geared through a relay and an actuator to the rudder, and in some cases to the elevator as well. The engine, too, may be stopped in the air, at will, by radio. There were several of these machines flying quite successfully at Langley.

Several of these machines were fitted with apparatus which is produced commercially, but an outstanding performance was put up by a machine fitted by its owner with a radio set that he had made himself. This machine was put into a spin when at a good height and a successful recovery made when the aircraft was only 20ft or so from the ground! I am told that this was most impressive to see.

Alverstoke, Hants. C. M. B. STALKARTT, Major.

AIR-RACE NEWS

A Compliment that Missed the Mark

MAY I make a modest *riposte*—or is it a parry?— to your comments on page 35 of *Flight* for July 14th, concerning my office as Hon. Press Marshal of the Royal Aero Club for the National Air Races at Birmingham over the August Bank Holiday week-end?

As you state, in the past there has been a limited amount of information for such functions; now, surely, you cannot seriously complain if there is not only bread and butter but jam on the information? Or is it true that the old adage applies: "Anything you say will be taken down, altered, and sent to the Editor?"

Seriously, these races are important: the world will be watching them. I realize that you cannot print *all* the information concerning them, but surely your sub-editors will segregate the cream from the milk?

Finally, may I please reiterate in your columns that I am now a no-hat civilian? I insist on this because first you, Sir, have a more distinguished record than I in the War, and secondly because I cannot afford even a bowler hat, as this works out at £35 a year for cloakroom tips (not counting Sundays). B. J. HURREN.

London, W.1.

[We were not seriously complaining, or even complaining at all: our paragraph was, in fact, intended as a tribute to Mr. Hurren's energy in providing such generous amounts of "National" milk from which we are only too willing to skim the cream. Officials of lesser aero clubs who from time to time organize races and other functions—and then produce inadequate information about them too late—would do well to follow our correspondent's example.—ED.]

FORTHCOMING EVENTS

July 23rd.—"Daily Express" Air Pageant, Gatwick Airport.
July 23rd to 31st.—Royal Dutch Aero Club; First International Aviation Show, Ypenburg.
July 30th to Aug. 1st.—King's Cup Race and National Air Races, Elmdon Airport, Birmingham.
Aug. 21st to 28th.—British Gliding Association; National Gliding Contests, Gt. Hucklow, Derbyshire.
Aug. 21st.—Wiltshire Flying Club and Royal Artillery Flying Club; Thruxton Air races.
Aug. 28th.—Cowes Aero Club; Air Display.
Sept. 6th to 8th.—R.A.F. Golfing Society; Autumn Meeting and Ladies' Section Championship at Walton Heath Golf Club.
Sept. 7th to 11th.—S.B.A.C. Annual Flying Display and Exhibition, Farnborough.
Sept. 7th.—R.Ae.S. (Luton); "Air Liner Operation."
Sept. 12th to 13th.—Battle of Britain Week. R.A.F. "At Home" day Sept. 17th.
Sept. 14th.—Inter-Services Swimming Championships, Seymour Hall, Marylebone, London.
Oct. 5th.—R.Ae.S. (Luton); Film Show.
Nov. 2nd.—R.Ae.S. (Luton); "Gas Turbine Development."
Nov. 23rd.—R.Ae.S. (Luton); "Brains Trust."
Dec. 7th.—R.Ae.S. (Luton); "Role of Aircraft in Future Warfare," Air Marshal Sir Robert Saundby, K.B.E., C.B., M.C., D.F.C., A.F.C.

Royal Air Force and Naval Aviation News and Announcements

SERVICE AVIATION

FOR INSPECTION: During "Verity," the recent Western Union Naval exercise, the C.-in-C., Admiral of the Fleet Sir Rhoderick McGrigor, used this Sikorsky Hoverfly I to tour the vessels under his command.

Graduation at Cranwell

MARSHAL of the R.A.F. Viscount Trenchard will be the reviewing officer at the second post-war graduation parade, at the R.A.F. College, Cranwell, of cadets who have completed the full course of training for permanent commissions in the R.A.F. This parade—of the 47th entry—will take place on July 27th. At the last parade, which was described in *Flight* of April 21st, H.R.H. the Duke of Gloucester took the salute.

R.A.F. Reserves Club

AIR CHIEF MARSHAL SIR GUY GARROD, G.B.E., K.C.B., M.C., D.F.C., has accepted the invitation of the committee of the R.A.F. Reserves Club to become its first president. Until his retirement from the active list last year, Air Chief Marshal Garrod was Head of the R.A.F. Delegation in Washington, and permanent R.A.F. representative on the Military Staff Committee of the United Nations Organization.

The Reserves Club, which was started just over a year ago for serving and ex-members of the R.F.C., the R.A.F.V.R., and the R.Aux.A.F., is continuing to "lodge" at the R.N.V.R. Clubhouse at 38, Hill Street, Berkeley Square, pending acquisition of its own premises. By arrangement with the R.N.V.R. Club all Reserve Club members are given the full facilities of the Clubhouse, which include use of all rooms and residential accommodation.

For town members the annual subscription is two guineas, and for country members one guinea. The membership year runs from July, and applications for membership should be addressed to the Secretary, R.A.F. Reserves Club, 38, Hill Street, London, W.1.

Cadets' New Commander

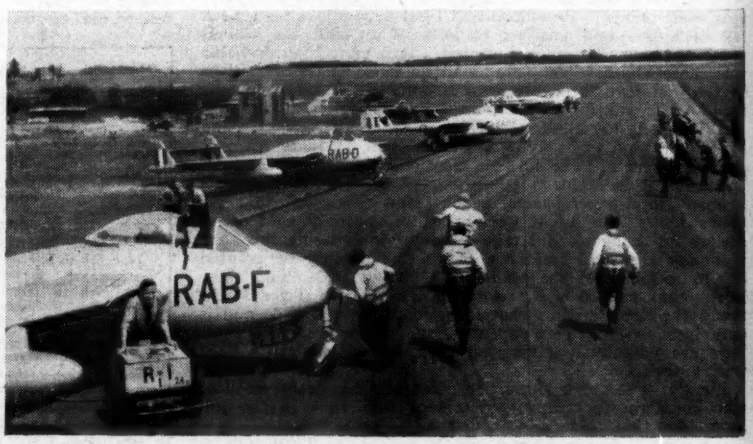
NOW a member of the H.Q. Staff of Reserve Command at White Waltham, G/C. E. M. Donaldson, D.S.O., A.F.C., has assumed responsibility, within the Command, for the direction, administration and training policy of the Air Training Corps and the R.A.F. section of the Combined Cadet Force. He will take charge of the newly formed cadet branch, which deals with all matters affecting the pre-entry Services. Announcing the appointment, the Air Ministry states that G/C. Donaldson will virtually command the 800 A.T.C. squadrons—a force of 47,000 cadets—now active throughout the United Kingdom.

G/C. E. M. Donaldson, D.S.O., A.F.C.

This imaginative appointment will undoubtedly appeal to cadets. Their new commander is 37, and not only has a fine record as a fighter pilot—his D.S.O. was awarded for courage and inspiring qualities of leadership when commanding No. 151 Squadron over Dunkirk in 1940—but also established the second post-war world speed record, in 1946, of 616 m.p.h., in a Gloster Meteor. As Senior Air Staff Officer of No. 12 Group, Fighter Command, he has also acquired administrative experience. G/C. Donaldson's two brothers also won the D.S.O. in the R.A.F.—a record unsurpassed by any other Service family.

Stalag Luft III Fund

THE Stalag Luft III Communal Fund, organized at the German camp to assist escapees and for other purposes, is shortly to be wound up. A sum of approximately £11,000 remains for disposal, and it is felt that, since a share-out to all the original contributors in proportion to their contributions would bring only small benefit to individuals, the officers concerned would prefer to see the sum credited to the R.A.F. Benevolent Fund for special distribution to needy ex-P.o.W.s of all ranks, or to their next-of-kin or dependants. Nevertheless, any entitled officer (or his next-of-kin) wishing for a proportionate share



GLOUCESTER VAMPIRES: Second of the Auxiliary squadrons to receive Vampires, No. 501 (County of Gloucester) Squadron, commanded by S/L. Tom James, took part in Exercise "Foil". Pilots and ground crews are shown during one of the more hectic moments.

Service Aviation . . . . .

payment should make a claim to the Director of Personal Services (P.6), Air Ministry, Adastral House, London, before January 1st, 1950.

Reunion

DETAILS of a reunion for No. 30 Squadron, to be held in October, may be obtained from J. C. Perkins, 7, Prince of Wales Mansion, Prince of Wales Drive, London, S.W.11.

R.O.C. Volunteers

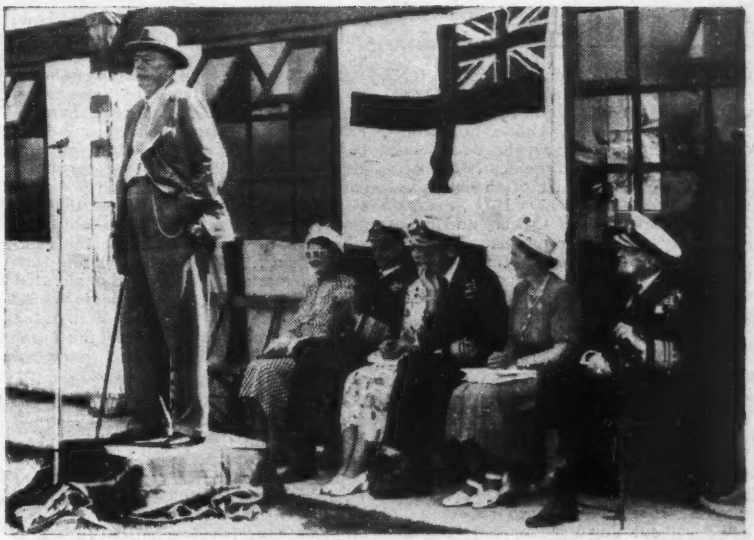
OF nearly 400 applicants to join the Royal Observer Corps, received during May, 99 were from women. In each of the five R.O.C. areas the applications were: Southern area 58 men, 27 women; Midland area 85 men, 25 women; Western area 72 men, 24 women; North-Western area 44 men, 15 women; Scottish area 22 men, 8 women.

All areas still need volunteers to bring the Corps up to its target strength of 28,000. The lower age limit for volunteers is 16 and the upper limits are 45 for service at centres and 55 for service at posts.

Malayan Achievement

BEFORE its transfer to Singapore after six months' service at Kuala Lumpur in operations against Communist bandits, No. 52 Transport Squadron was inspected by His Excellency the High Commissioner for the Federation of Malaya, Sir Henry Gurney, accompanied by the A.O.C., Malaya, Air Vice-Marshal F. J. W. Mellersh, and the Station Commander, Wing Commander J. M. N. Pike. In his address Sir Henry Gurney said, "I want to say a special word of thanks to your Commanding Officer and all ranks of No. 52 Squadron for your untiring efforts during the six months that you have been stationed here. Since your arrival here in November you have dropped over 400,000 lb of supplies to the army and police, carried out 69 reconnaissances, carried 2,300 personnel and 200,000 lb of freight and flown over 2,000 hours without an avoidable accident or casualty."

After the parade seven of the squadron aircraft, led by the commanding officer, flew past in a double Vic formation with one aircraft "in the box." The rear "V" was led by F/L. J. H. Johnstone.



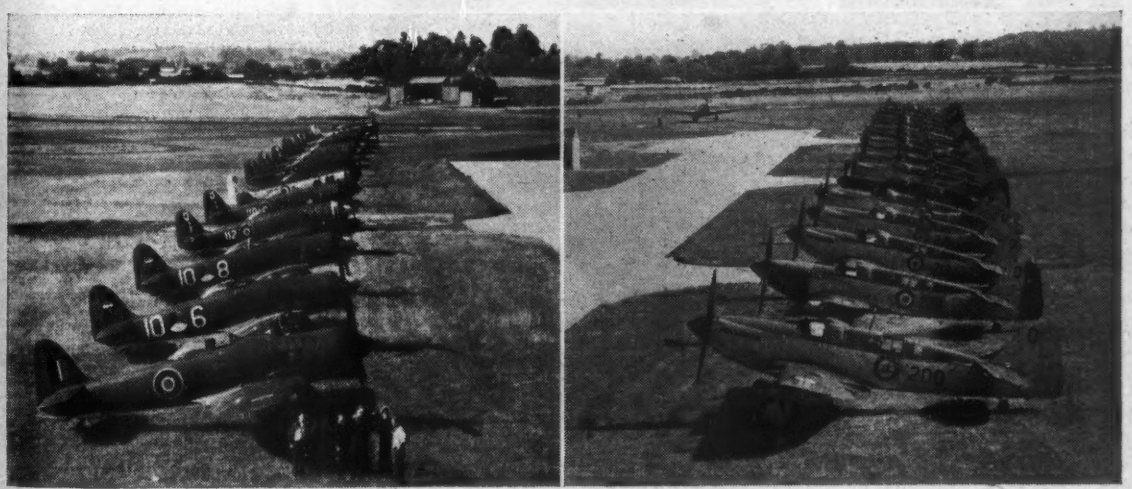
HELPING HAND: Sir Richard Fairey (left), who presented two Tipsy light aircraft to the Royal Naval Flying Club, is seen at the re-inaugural ceremony at Gosport, when, as reported in "Flight" last week, the Club's new premises were officially opened. Seated are (left to right): Mrs. Vinson; Admiral of the Fleet Sir Algernon Willis (C.-in-C. Portsmouth); Lady Portal; Vice-Admiral Sir Reginald Portal, Flag officer Air (Home); Lady Willis; and Vice-Admiral Sir George Creasy (Fifth Sea Lord).

R.A.F. Appointments

WITH effect from July 4th, A.V-M. D. A. Boyle, C.B., C.B.E., A.F.C., has been appointed Director-General of Manning at the Air Ministry.

A.V-M. Boyle was previously Director-General of Personnel (I) at the Air Ministry, from July, 1948, after having been Assistant Commandant of the R.A.F. Staff College, Bracknell, from January, 1947. He took the 1946 course at the Imperial Defence College and was formerly A.O.C. No. 11 Group, Fighter Command, to which he went in July, 1945, after commanding No. 85 Group, 2nd T.A.F., for three months. Previously he was S.A.S.O., No. 83 Group, for two years, and from January, 1942, until May, 1943, he commanded R.A.F. Station, Stradishall. In 1941 he was Assistant Secretary to the Committee of Imperial Defence. He was Chief Flying Instructor at Cranwell for two years before the war and was afterwards on the Headquarters Staff of the Advanced Air Striking Force, France, until the evacuation. In 1943-44 he was an Air A.D.C. to the King. Born in 1904, A.V-M. Boyle was commissioned from Cranwell 20 years later.

Succeeding A. Cdre. E. D. H. Davies,



STRIKE LINE-UP: This photograph of 13 Sea Furies and 18 Fireflies was taken at Yeovilton R.N.A. Station, during the closing stages of Exercise "Verity" when 15th Carrier Air Group plus No. 4 Squadron, Royal Netherlands Naval Air Service, made a fly-past over the combined fleet anchored in Weymouth Bay.

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C.B.E., as A.O.C. No. 65 (London Reserve) Group is A. Cdre. W. J. M. Akerman, C.B.E. Since early in 1946, A. Cdre. Akerman has been Air Officer in Charge of Records. Previously, he had commanded No. 87 Group for nearly a year. During the greater part of the war, he was at R.A.F. Middle East H.Q., first as Senior Personnel Staff Officer, and later as Deputy Air Officer in Charge of Administration. A. Cdre. Akerman, who is 47, was in the first entry of cadets at Cranwell, and was commissioned in 1921.

Horsham St. Faith Complaint

THE Under-Secretary of State for Air, Mr. Geoffrey de Freitas, stated in the House of Commons on July 5th that a letter had been sent to the parish council of Horsham and Newton St. Faiths, Norfolk, setting out the reasons for continuation of Sunday flying from the Fighter Command Meteor base at Horsham St. Faith. Sunday flying, he said, had been cut down as far as possible, and was at present limited to seven or eight Sundays a year.

Mr. de Freitas was replying to a question concerning representations made by the parish council. The constituents on whose behalf the question was raised, it was stated, felt that, owing to the close proximity of the airfield to the built-up area, residents had to bear an unfair share of this unavoidable inconvenience. Mr. de Freitas replied that this was true, but he regretted that the training must go on.

The above question and answer should be of particular interest to those members of the R.A.F. who took part in Exercise *Foil*, which, of course, was from beginning to end a test of this country's air defences; although this particular complaint arose from activity during *Foil*, it was stated in the House that the aggrieved residents had "no objection whatever to the existence of the exercises as such." The condescending tone of the remark prompts the thought that presumably these same residents would likewise have "no objection" to being protected from air attack in the event of a war.

"605's" Summer Training

DURING their 15-day annual training period on the island of Sylt, members of No. 605 (County of Warwick) Squadron, R.Aux.A.F., logged 186 hr 15 min flying time. The Squadron's Vampire Is returned to their base at Honiley, near Kenilworth, on July 2nd.

An intensive armament training programme had been arranged, and in the first week the Vampires made 91 air-to-ground firing sorties on the Morsum and List ranges. Due to lack of practice, scores on the first few sorties were naturally low, but one of the Sylt armament officers subsequently lost his wager that no one would achieve a 50 per cent score. First to confound his prediction was F/O. R. Raby, who put 62 rounds out of 120 into one of the targets.

For the second week, air-to-air firing had been scheduled, but low stratus cloud from the North Sea persisted for the remainder of the camp, and the whole programme had to be cancelled. At the conclusion of their visit, however, the "campers" were not without regrets at returning to England, and speak well of the hospitality afforded by the Regulars on Sylt. No. 605 Squadron is commanded by S/L. R. C. T. Goodwin, and was visited during the camp by A. Cdre. G. H. Vasse, A.O.C. 63 Group.

Stations at Home

FOLLOWING what is now a Service custom, the R.A.F. will admit the public to over 80 stations on Saturday, September 17th, as part of the celebrations marking Battle of Britain week (Monday, September 12th to Sunday, September 18th). There will be flying displays at most of the stations.

Admission will be free, but the public will be invited to place contributions in collecting boxes. A charge will be made for parking cars. Proceeds will go to R.A.F. charities, which last year received nearly £11,000 as the result of the open day. Among the stations near London that will be open will be West Malling (Kent), Manston (Kent), Hendon (Middlesex), Biggin Hill (Kent), North Weald (Essex), Hawkinge (Kent), Halton (Bucks), Chigwell, Debden—home of the Empire Radio School—and Hornchurch (Essex). Bomber Command Headquarters will hold its "at home" at Booker, near Marlow, Bucks.

Although many stations are in rather isolated places there are few which are not within fairly easy reach of large centres, and many thousands of people will have an opportunity of seeing the varied work of the R.A.F. Among the more important airfields which will be open, will be Cranwell (Lincs), the Fighter Command stations at Odiham (Hants), Linton-on-Ouse (Yorks) and Horsham St. Faith (Norfolk), the Bomber Command stations at Binbrook (Lincs) and Wyton (Hunts), the Flying Training Command station at Feltwell (Norfolk), the Technical Training Command station at Cosford (Staffs) and the Maintenance Command station at Andover (Hants).

R.A.F. Permanent Commissions

THE following officers have been selected for permanent commissions in the Royal Air Force, in the branches shown:—

GENERAL DUTIES BRANCH.

Flight Lieutenants: M. J. Creighton; R. E. Harrison, D.F.C.; K. L. Hughes; W. D. James; E. F. Leggett; R. C. Penning, D.F.C.; W. L. M. Scott; D. G. Vasse, M.C., A.F.C.; J. F. Walker; J. N. Williams; I. N. Wilson.

TECHNICAL BRANCH.

Squadron Leaders: J. Cassell; R. C. Crosbie; E. C. H. Faulkner, M.B.E.; J. C. K. Sutton.

Flight Lieutenants: S. J. Peters; N. Stokle; L. Whittaker, D.F.C.

Flying Officers: J. C. Hempseed; J. G. Horner; R. P. Kay; E. R. Madger.

EQUIPMENT BRANCH.

Squadron Leader: P. J. Pope.

Flight Lieutenants: H. Andrew; H. Gill; S. L. Manfield.

Flying Officers: R. P. Aylward; J. A. Cable; L. Davies; T. F. Fawcus; L. Hodges.

SECRETARIAL BRANCH.

Flight Lieutenants: B. A. James, M.C.; R. V. Millington.

Flying Officer: R. Gebbels.

AIRCRAFT CONTROL BRANCH.

Flight Lieutenants: F. J. Chudley, D.F.M.; P. F. Varey; L. J. C. Wildig.

PROVOST BRANCH.

Flight Lieutenants: J. G. Blackburn; G. Craig.

Flying Officer: W. E. Cannon.

AT THE C.F.S. REUNION: (Top left). G/C. J. Cox, D.F.C., and A.Cdre. D. H. F. Barnett, C.B.E., D.F.C. (Top right). G/Cs. J. G. Glen, R. L. Wallace, C.B.E., A.F.C., and T. W. Kean, A.F.C. (Bottom). Air Chief Marshal Sir James Robb, K.B.E., C.B., D.S.O., D.F.C., A.F.C., Marshal of the R.A.F. Sir John Salmond, G.C.B., C.M.G., C.V.O., D.S.O., D.C.L. LL.D., Air Chief Marshal Sir John Slessor, G.C.B., D.S.O., M.C., and G/C. Stephenson, who now commands the Central Flying School. The re-union was reported in Flight last week.